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COMMISSION

August 14, 2015

The Honorable Jocelyn Boyd  
Chief Clerk and Administrator  
Public Service Commission of South Carolina  
101 Executive Center Drive  
Columbia, South Carolina 29201

**Re: Quarterly Report of SCE&G Concerning Construction of V.C. Summer  
Nuclear Station Units 2 and 3**

Dear Ms. Boyd:

Enclosed plead find informational copies of South Carolina Electric and Gas Company's (the "Company" or "SCE&G") Quarterly Report (the "Report") for the period ending June 30, 2015, related to the construction of V.C. Summer Nuclear Stations Units 2 and 3 (the "Units"). This Report is being filed with the South Carolina Office of Regulatory Staff ("ORS") pursuant to the Base Load Review Act, S.C. Code Ann. § 58-33-277 (Supp. 2014) and the provisions of Order No. 2009-104(A) of the Public Service Commission of South Carolina (the "Commission").

Because this Report contains certain commercially sensitive information, SCE&G is filing both redacted (Public) and unredacted (Confidential) versions of this Report with the Commission and with ORS. For your convenience, we are providing you with ten (10) copies of the Public version of this Report. SCE&G is also providing one (1) copy of the Confidential version of this Report and is hereby petitioning the Commission to enter a confidentiality order protecting the commercially sensitive information contained therein from disclosure, as set forth below.

The Confidential version of this Report contains confidential information related to the pricing and pricing terms of the Engineering, Procurement and Construction Agreement (the "EPC Contract") between SCE&G and a consortium consisting of Westinghouse Electric Company, LLC and Chicago Bridge & Iron, formerly the Shaw Group, (collectively, the "Contractor"). The EPC Contract contains confidentiality provisions that require SCE&G to protect proprietary information that the Contractor believes to constitute trade secrets and to be commercially sensitive. The Contractor has requested that SCE&G maintain the confidentiality of certain information contained in **Appendix 2** and **Appendix 3**. This confidential information has been redacted from the Public Version of these appendices.

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In keeping with the Contractor's request and the terms of the EPC Contract, SCE&G respectfully requests that the Commission find that the Confidential version of the Report contains protected information and issue a protective order barring the disclosure of certain portions of Appendix 2 and Appendix 3 of the Report under the Freedom of Information Act, S.C. Code Ann. §§ 30-4-10 *et seq.*, 26 S.C. Code Ann. Regs. 103-804(S)(1), or any other provision of law, except in its public form. Pursuant to 26 S.C. Code Ann. Regs. 103-804(S)(2), the determination of whether a document may be exempt from disclosure is within the Commission's discretion. Such a ruling in this instance would be consistent with the Commission's prior rulings in Docket No. 2008-196-E, Docket No. 2009-211-E, Docket No. 2010-376-E, 2012-203-E, and Docket No. 2015-103-E. In those dockets, the Commission found, among other things, that the pricing and pricing terms of the EPC Contract are confidential, and issued a protective order barring the disclosure of such information. *See, e.g.*, Commission Orders Nos. 2008-467, 2008-696, as amended by Order No. 2008-739, 2009-888 and 2010-198 issued in Docket No. 2008-196-E; Commission Order No. 2009-401 issued in Docket No. 2009-211-E; Commission Order Nos. 2010-795, 2011-127, and 2011-177 issued in Docket No. 2010-376-E; Commission Order Nos. 2012-415, 2012-621 and 2012-623 issued in Docket No. 2012-203-E; and Commission Order No. 2015-215 issued in Docket No. 2015-103-E.

To this end, and in accordance with Commission Order No. 2005-226, dated May 6, 2005, in Docket No. 2005-83-A, enclosed with this letter are the following:

1. A true and correct copy of the Confidential version of the Report in a sealed envelope marked "CONFIDENTIAL." The title page of the Confidential version of the Report is marked "CONFIDENTIAL VERSION" and each page of the Confidential version of the Report is marked "CONFIDENTIAL VERSION."
2. Ten copies of a redacted Public version of the Report.

In the event that anyone should seek disclosure of the unredacted Confidential version of the Report, SCE&G respectfully requests that the Commission notify SCE&G of such request and provide it and the Contractor with an opportunity to obtain an order from this Commission or a court of competent jurisdiction protecting the Confidential version of this document from disclosure.

If you have any questions regarding these matters, please contact me.

Sincerely,

**WOMBLE CARLYLE SANDRIDGE & RICE**  
*A Limited Liability Partnership*



Belton T. Zeigler  
Partner

cc: Anthony James, Director of Nuclear Development  
Shannon Bowyer Hudson, Esquire  
K. Chard Burgess, Associate General Counsel

**V.C. Summer Nuclear Station Units 2 & 3****Quarterly Report to the South Carolina Office of Regulatory Staff  
Submitted by South Carolina Electric & Gas Company  
Pursuant to Public Service Commission Order No. 2009-104(A)****Quarter Ending June 30, 2015****I. Introduction and Summary****A. Introduction**

This quarterly report is submitted by South Carolina Electric & Gas Company (SCE&G or the Company) to the Public Service Commission of South Carolina (the Commission) and the South Carolina Office of Regulatory Staff (ORS). It is submitted in satisfaction of the requirements of S.C. Code Ann. § 58-33-277 (Supp. 2014) and the terms of Commission Order No. 2009-104(A). This report provides updated information concerning the status of the construction of V.C. Summer Nuclear Station (VCSNS) Units 2 & 3 (the Units) and provides the current capital cost forecasts and construction schedules for the Units as of the close of the quarter.

In Order No. 2012-884 dated November 15, 2012, the Commission approved updated construction and capital cost schedules for the Units. On March 12, 2015, the Company filed a petition with the Commission (the March 2015 Update Petition) seeking approval of an updated construction schedule and capital cost schedule for the Units. The March 2015 Update Petition is discussed in Section I.C below. Pending approval of new schedules, the current schedules and forecasts presented in this report are compared against those approved in Order No. 2012-884.

**B. Structure of Report and Appendices**

The current reporting period is the quarter ending June 30, 2015. The report is divided into the following sections:

- Section I: Introduction and Summary;
- Section II: Progress of Construction of the Units;
- Section III: Anticipated Construction Schedules;

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Section IV: Schedules of the Capital Costs Incurred Including Updates to the Information Required by S.C. Code Ann. § 58-33-270(B)(6) (the Inflation Indices);

Section V: Updated Schedule of Anticipated Capital Costs; and

Section VI: Conclusion.

**Appendices 1, 2, and 4** to this report contain detailed financial, milestone and other information updating the schedules approved by the Commission in Order No. 2012-884. For reference purposes, **Appendix 3** provides a copy of the capital cost schedule for the project as approved in Order No. 2012-884. **Appendix 5** provides a list of the License Amendment Requests (LARs) filed by SCE&G with the Nuclear Regulatory Commission (NRC).

A confidential and a public version of this report and its attachments are being provided. Unless otherwise specified, all cost information reflects SCE&G's 55% share of the project's cost in 2007 dollars. Attached to the end of the report is a glossary of acronyms and defined terms used.

### C. Construction Schedule and Milestones

**The Revised Fully-Integrated Construction Schedule.** As previously reported, in the third quarter of 2014 SCE&G received a new revised, fully-integrated construction schedule (Revised, Fully-Integrated Construction Schedule) from the Consortium, and thereafter received cost information related to that schedule. SCE&G undertook an initial evaluation of this information and potential schedule mitigation strategies jointly with the Consortium's executive management. Based upon that initial evaluation, the Consortium indicated that the substantial completion date of Unit 2 was expected to occur by June 2019 and that the substantial completion date of Unit 3 would be expected approximately 12 months later.

During the first quarter of 2015, SCE&G determined that the joint review with the Consortium of the Revised, Fully-Integrated Construction Schedule and associated schedule mitigation strategies had progressed sufficiently for SCE&G to recognize the Consortium's Revised, Fully-Integrated Construction Schedule as the project schedule for Base Load Review Act (BLRA) reporting purposes and other purposes related to the management of the project. From the perspective of the Engineering, Procurement and Construction Agreement (EPC Contract), as amended, between SCE&G, the South Carolina Public Service Authority (Santee Cooper) and WEC/CB&I, SCE&G has not released WEC/CB&I from any previous schedule commitments or other contractual commitments. It is SCE&G's position that the delay and the majority of the increased costs reflected in the current schedules have been due to WEC/CB&I's failure to meet its contractual obligations related to structural module fabrication, timely design finalization,

labor productivity, indirect labor costs and other matters, all despite SCE&G's repeated insistence upon improvements in performance. Accordingly, SCE&G has advised WEC/CB&I that it remains contractually obligated to satisfy the Guaranteed Substantial Completion Dates previously agreed to in the EPC Contract and other obligations under the EPC Contract, and WEC/CB&I is liable for costs associated with delay and other matters.

**The Current Substantial Completion Dates and Milestone Schedule.** The Revised, Fully-Integrated Construction Schedule provides a new substantial completion date for Unit 2 of June 19, 2019, and a new substantial completion date for Unit 3 of June 16, 2020. The Consortium continues to refine and update the construction schedule as designs are finalized, construction progresses, and additional information is received. These changes are incorporated in the milestone report attached as **Appendix 1**. They remain subject to mitigation and further review by SCE&G. They reflect the changes that can be expected to occur from time to time in the ordinary course of reporting on the construction of the project by WEC/CB&I.

**Letter Related to Partial Payments.** Under the EPC Contract, SCE&G must pay WEC/CB&I at least 90% of certain types of disputed amounts, provided that WEC/CB&I has properly invoiced those amounts to SCE&G under the EPC Contract. Other provisions of the EPC Contract provide that SCE&G shall recoup from WEC/CB&I any payments made on disputed invoices if the dispute is resolved in SCE&G's favor.

WEC/CB&I takes the position that the additional EPC Contract costs which SCE&G intends to challenge fall under the provisions requiring 90% partial payments. SCE&G has not acquiesced in this position nor has it waived its claim that these charges are entirely unjustified. However, in response to WEC/CB&I's position in this matter, SCE&G sent WEC/CB&I a letter on May 5, 2015, outlining certain steps SCE&G intends to take to withhold payment of invoiced amounts related to delay and failure to meet reasonable staffing and productivity standards. In deference to WEC/CB&I's position, and without waiving any rights, SCE&G will make partial payment of 90% of certain of these disputed costs. SCE&G implemented these measures effective May 5, 2015, and reserves the right, in accordance with the EPC Contract, to recover from WEC/CB&I all or part of the 90% payments.

**The March 2015 Update Petition.** The March 2015 Update Petition requests that the Commission establish new BLRA milestone dates and adopt updated capital cost schedules for the project under the authority of S.C. Code Ann. § 58-33-270(E). The Commission is considering these requests in Docket No. 2015-103-E.

On June 29, 2015, the Company, the ORS, and the South Carolina Energy Users Committee (the Settling Parties) submitted a Settlement Agreement to the Commission. The Settling Parties agreed that the changes in cost and milestone schedules were not the result of imprudence on the part of the utility and recommended that the Commission

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approve the schedules contained in the March 2015 Update Petition as filed. As part of the settlement, SCE&G agreed to base its revised rates filings made beginning in 2016 on a return on equity of 10.5% rather than 11.0% as approved in Order No. 2009-104(A). The lower return on equity is estimated to reduce the revenue generated by future revised rates filings by a total of \$15 million. Two parties to the proceedings, the Sierra Club and CMC Steel South Carolina, did not sign the Settlement Agreement.

On July 21 and 22, 2015, the Commission held a hearing on the merits of the March 2015 Update Petition. CMC Steel South Carolina did not appear at the hearing or otherwise oppose the adoption of the Settlement Agreement. The Sierra Club did appear at the hearing to oppose the relief requested by SCE&G but did not submit testimony.

The statutory deadline for the Commission to issue an order on the merits of the March 2015 Update Petition is September 12, 2015. Any appeal would go directly to the Supreme Court of South Carolina.

**Updated Cost Schedules.** The cost schedules reflected in the March 2015 Update Petition show that the cost of the project has increased from \$4.5 billion, as approved in Order No. 2012-884, to \$5.2 billion, an increase of \$698 million. This amount includes an adjustment for the recovery of liquidated damages of \$86 million from the Consortium due to delay in substantial completion of the Units. It also reflects 90% of forecasted increases in EPC Contract charges due to project delay (\$142.6 million net of liquidated damages), the failure by the Consortium to meet its original estimates of labor productivity and indirect labor costs (\$154.8 million), and increased scopes of work for licensing and first-of-a-kind testing that SCE&G maintains are fixed or firm work under the EPC Contract (\$27.4 million).

In filing these updated schedules with the Commission, SCE&G has reserved all of its rights under the EPC Contract related to the delay in the construction schedule and increases in project costs. SCE&G has not approved any change in the Guaranteed Substantial Completion Dates under the EPC Contract, and has not accepted the Consortium's contention that the new substantial completion dates are made necessary by delays that are excusable under the EPC Contract.

**Administration of Additional Costs and Partial Payments.** At the close of the period, SCE&G has withheld \$2.0 million under the 90% payment provision of the EPC Contract. Negotiations continue in order to resolve the disputed costs. If SCE&G recovers any past payments under the 90% payment provision through negotiation or litigation, those amounts will be reflected as reductions to the capital cost of the project.

**Milestones.** There are 146 specific BLRA milestones for reporting purposes. As of June 30, 2015, 106 milestones have been completed. The remaining milestones have been delayed as reflected in the Revised, Fully-Integrated Construction Schedule. Comparing the scheduled milestone completion dates as of the close of the period to the

milestone completion dates approved by the Commission in Order No. 2012-884, 40 milestones have been delayed. Of them, 33 have been delayed by more than 18 months.

#### **D. Construction Costs and Cost Forecasts**

SCE&G anticipates that by December 31, 2015, the Company will have spent approximately \$1.138 billion less than it originally planned to spend as forecasted in the capital cost schedule approved in Order No. 2012-884. This decreased level of spending is primarily attributable to the delay in the construction schedule as discussed in Section I.C. Until a revised capital cost forecast is approved by the Commission, SCE&G projects that it will continue to spend less than the forecasted amounts set forth in the capital cost schedule approved in Order No. 2012-884. The present cash flow forecast indicates that the Company will be able to complete the Units for \$5.2 billion in 2007 dollars, which is \$698 million more than the amount approved in Order No. 2012-884.

The current cost estimates include changes in timing of costs and shifts in costs among cost categories that occur in the normal course of managing the project. All amounts set forth in this Quarterly Report are based on SCE&G's existing 55% interest, except where expressly stated to be based upon 100% of the cost.

**Cost Comparisons.** In Order No. 2009-104(A), the Commission recognized that forecasts of Allowance for Funds Used During Construction (AFUDC) and escalation would vary over the course of the project and required those forecasts to be updated with each quarterly report. Escalation indices were issued in May 2015 for the period of July through December 2014 and have been used in forecasting the construction costs for the project that are presented here.

**Chart A** below compares the current capital cost forecast to the forecast presented in the last quarterly report. This chart shows an increase in Gross Construction Costs of \$26.9 million over the life of the project. With each quarterly update, a quarter that had been subject to the five-year escalation rate becomes subject to the one-year rate. The figures reported on **Chart A** also include the effect of calculating escalation on an updated cash flow projection for the project.



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**Chart A: Reconciliation of Capital Cost (\$000)**

<b><u>Forecast Item</u></b>	<b><u>Projected @ 06/30/15 (Five-Year Average Escalation Rates)</u></b>	<b><u>Projected @ 03/31/15 (Five-Year Average Escalation Rates)</u></b>	<b><u>Change</u></b>
Gross Construction	\$6,854,304	\$6,827,402	\$26,902
Less: AFUDC	\$285,477	\$289,124	(\$3,647)
Total Project Cash Flow	\$6,568,827	\$6,538,278	\$30,549
Less: Escalation	\$1,322,189	\$1,291,640	\$30,549
<b>Capital Cost, 2007 Dollars</b>	<b>\$5,246,638</b>	<b>\$5,246,638</b>	<b>\$0</b>

**Chart B** compares the current capital cost forecast to the forecast on which the Commission relied in adopting Order No. 2012-884. Chart B shows that the forecasted capital cost of the Units in 2007 dollars has increased by \$698 million. Due to schedule delay, changes in forecasted escalation and AFUDC (see Section I.F. below) the cost of the plant in future dollars has increased by approximately \$1.1 billion since Order No. 2012-884 was issued.

**Chart B: Reconciliation of Capital Cost (\$000)**

<b><u>Forecast Item</u></b>	<b><u>Projected @ 06/30/2015 (Five- Year Average Escalation Rates)</u></b>	<b><u>As Forecasted and Approved In Order No. 2012-884</u></b>	<b><u>Change</u></b>
Gross Construction	\$6,854,304	\$5,754,565	\$1,099,739
Less: AFUDC	\$285,477	\$237,715	\$47,762
Total Project Cash Flow	\$6,568,827	\$5,516,849	\$1,051,978
Less: Escalation	\$1,322,189	\$968,444	\$353,745
<b>Capital Cost, 2007 Dollars</b>	<b>\$5,246,638</b>	<b>\$4,548,405</b>	<b>\$698,233</b>

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**Chart C** below shows the current forecast of the cost of the Units compared to the cost forecasts underlying the initial BLRA order, which was issued by the Commission in 2009, and the update orders that the Commission issued subsequently. The decline in capital cost forecasts in 2007 dollars between Order No. 2010-12 and 2011-345 reflects the removal of Owner's contingency amounts from the forecasts as required by the opinion of the Supreme Court of South Carolina in *South Carolina Energy Users Comm. v. South Carolina Pub. Serv. Comm'n*, 388 S.C. 486, 697 S.E.2d 587 (2010). This chart shows that the cost of the project in 2007 dollars has increased by \$712 million since the initial forecasts and the cost of the project in future dollars is approximately \$541 million above the initial forecast.

**Chart C: Summary of Nuclear Filings (billions of \$)**

<b><u>Forecast Item</u></b>	<b><u>Order No. 2009-104(A)</u></b>	<b><u>Order No. 2010-12</u></b>	<b><u>Order No. 2011-345</u></b>	<b><u>Order No. 2012-884</u></b>	<b><u>Projected @ 06/30/2015</u></b>
Capital Cost, 2007 Dollars	\$4.535	\$4.535	\$4.270	\$4.548	<b>\$5.247</b>
Escalation	\$1.514	\$2.025	\$1.261	\$0.968	<b>\$1.322</b>
Total Project Cash Flow	\$6.049	\$6.560	\$5.531	\$5.517	<b>\$6.569</b>
AFUDC	\$0.264	\$0.316	\$0.256	\$0.238	<b>\$0.285</b>
<b>Gross Construction</b>	<b>\$6.313</b>	<b>\$6.875</b>	<b>\$5.787</b>	<b>\$5.755</b>	<b>\$6.854</b>

### **E. Escalation Rates**

As provided in Order No. 2009-104(A), the most current one-year inflation indices are used to escalate costs occurring in the twelve-month period after the date of each quarterly report. The most current escalation indices are found in the Handy-Whitman January 2015 update that was issued in May 2015 and reports data for the period July to December 2014. Those rates are reflected in this report. The approved capital cost targets have been adjusted to reflect the currently reported historical escalation rates. The forecasted costs provided here reflect SCE&G's calculations related to the WEC/CB&I

claims, which change the index applicable to Firm with Indexed Adjustment cost categories going forward from a floating Handy-Whitman adjustment to a fixed rate for the life of the project.

As shown on **Appendix 4**, utility construction cost escalation rates were at historically high levels during the period 2005-2008 and have since dropped. Current escalation rates are shown below on **Chart D**. When compared to the previous Handy-Whitman release, the most recent update shows an upward trend in the one-year average rates and a downward trend in the five-year average rates.

**Chart D: Handy-Whitman Escalation Rates**

<b><u>Escalation Rate Comparison</u></b>		
	<b>Jan-June 2014</b>	<b>July-Dec 2014</b>
<b><u>HW All Steam Index:</u></b>		
One-Year Rate	<b>2.52%</b>	<b>3.17%</b>
Five-Year Average	<b>3.21%</b>	<b>2.94%</b>
Ten-Year Average	<b>4.35%</b>	<b>4.08%</b>
<b><u>HW All Steam/Nuclear Index:</u></b>		
One-Year Rate	<b>2.52%</b>	<b>3.17%</b>
Five-Year Average	<b>3.21%</b>	<b>2.95%</b>
Ten-Year Average	<b>4.38%</b>	<b>4.10%</b>
<b><u>HW All Transmission Plant Index:</u></b>		
One-Year Rate	<b>1.68%</b>	<b>2.52%</b>
Five-Year Average	<b>2.63%</b>	<b>1.88%</b>
Ten-Year Average	<b>4.05%</b>	<b>3.81%</b>

#### **F. AFUDC**

Consistent with Order No. 2009-104(A), SCE&G computes AFUDC based on the Federal Energy Regulatory Commission (FERC) approved methodology as applied to the balance of Construction Work in Progress (CWIP) that is outstanding between rate adjustments. SCE&G's projected AFUDC rate is currently 5.68%, compared to the rate of 5.28% that applied when Order No. 2012-884 was issued.

## **G. Compliance with the Commission-Approved Cumulative Project Cash Flow Target**

The current Cumulative Project Cash Flow target for the project was adopted by the Commission in Order No. 2012-884. In Order No. 2009-104(A), the Commission provided that the applicable Cumulative Project Cash Flow target would be adjusted with each quarterly report to reflect updated escalation data.

**Appendix 2** provides the Commission-approved Cumulative Project Cash Flow target updated for current escalation data. The cash flow targets through December 2014 have been updated to reflect actual escalation rates. The cash flow targets for the first quarter of 2015 and beyond have been updated based on the most recently available inflation indices, which for purposes of this report, are the indices provided in May 2015 that report data for the period July through December 2014. When final actual indices for 2015 become available, the cash flow data for 2015 will be revised to reflect the actual escalation rates.

**Appendix 2** compares the approved Cumulative Project Cash Flow target to the current cumulative cash flow schedules for the project, which include actual costs where available and SCE&G's working forecasts of annual cash flows for future years. In addition, the project cash flow targets presented on **Appendix 2** for 2012 have been adjusted to reflect timing differences between the billing methodology under the EPC Contract and the calculation of the escalated cash flow targets under Order No. 2009-104(A). Under the EPC Contract, for periods where actual escalation rates are not available, WEC/CB&I bills SCE&G based on a rolling two-year average of the applicable Handy-Whitman rate and provides adjustments to reflect the actual rate when it is known. An adjustment has been made to **Appendix 2** target calculations to offset the timing differences that arise as a result of WEC/CB&I's approach to estimated billings and credits. This adjustment applies to those EPC Contract cost categories that are subject to indexed escalation.

## **II. Progress of Construction of the Units**

### **A. Construction**

The project continues to maintain an excellent safety record that exceeds industry expectations for projects of comparable size. While certain aspects of the work present challenges to the completion schedule, overall progress continues with approximately 3,500 WEC/CB&I personnel and subcontractor workers on site daily.

As of the end of the quarter, the primary critical path for both Unit 2 and Unit 3 is the fabrication of the Shield Building panels supplied by Newport News Industrial (NNI). The current schedule for production of the Shield Building panels will require

remediation to support the updated substantial completion dates. Negotiations concerning the mitigation plan are on-going. SCE&G is awaiting confirmation that the Shield Building mitigation plan remains viable. For that reason, Shield Building construction remains a focus area for SCE&G's oversight of the project. Secondary construction critical paths include the successful assembly and setting in place of the CA01 modules for both Units and construction of the Annex Buildings to support first energizing of the Units for systems testing.

## **1. Unit 2 Inside-Containment Vessel Construction**

The Consortium placed Layers 3 and 4 of concrete, which forms the foundation for the Unit 2 CA01 module. Grouting of guide pins, inspection, and testing of Layers 3 and 4 were ongoing in preparation for setting CA01 module in the third quarter of 2015. Module CA02, which forms part of the in-containment refueling water storage tank and pressurizer cubicle wall, is substantially complete and is in final preparation for being lifted and set in place after the CA01 module is installed.

Prior to placement of Layers 3 and 4, NRC inspectors raised an issue related to the construction standards applied for welding in place the threaded rebar couplers that mechanically link rebar structures to abutting steel plates. The placement of concrete Layers 3 and 4 was authorized through a Preliminary Amendment Request (PAR), which allowed work to proceed in advance of LAR 15-09 which would amend the design basis documents to incorporate construction codes that authorize the welding standards that were used.

The section of the north wall of the Unit 2 CA20 module that was removed for realignment has been repaired and reinstalled. Placement of concrete within the walls of the Unit 2 CA20 module will follow. Installation of the blocks that anchor the Unit 2 CA20 module to its concrete foundations is approximately 75% complete.

## **2. Unit 2 Containment Vessel (CV)**

Welding of the seam joint between the Unit 2 CV Ring 1 and the Containment Vessel Bottom Head (CVBH) was completed to allow the setting of Shield Building panels adjacent to the seam joint. Welding of attachment plates to the Unit 2 CV Ring 2 is substantially complete and ventilation fittings are being attached. Unit 2 CV Ring 2 has been staged for lifting and placing atop Unit 2 CV Ring 1 when required module installations are complete inside the CV. The welding of the panels comprising Unit 2 CV Ring 3 is substantially complete. Welding and assembly of the lower course of plates forming the Unit 2 CV Top Head, which closes the top of the CV, are nearing completion. Acceptance rates

based on the Radiographic Testing (RT) of welds on the Units 2 and 3 CV Rings and Top Head remain above 99%.

### **3. Unit 2 Shield Building Construction**

The sixth and final layer of concrete that forms the foundation for the Unit 2 Shield Building was successfully placed. Reinforced Concrete to Steel Component (RC/SC) panels form the transition between the Shield Building and its concrete foundation. These panels (Shield Building Course 1) were fitted up and surveyed on a pad adjacent to Unit 2 to ensure alignment between the panels and the guide pins that are being placed in the foundation. Inspection of the concrete foundation and embedments for the RC/SC panels is underway and the RC/SC panels are being staged for installation.

Shield Building Courses 2 and 3, each numbering 12 panels, have been fit up and surveyed on a pad adjacent to Unit 2. The panels are being welded together in pairs in preparation for being lifted and set in place on the RC/SC ring. The welding of the vertical seams between these panels is largely complete. The pairs of Shield Building panels comprising Shield Building Course 2 are staged for installation. Fit-up on the Shield Building Course 4 Panels in preparation for pair welding is underway.

At the close of the period, WEC/CB&I had received 71 of 167 Unit 2 Shield Building panels from NNI.

### **4. Unit 2 Auxiliary and Annex Building Construction**

The first four modules for the Unit 2 Auxiliary Building were lifted and set in place during the period. They are the Unit 2 CA22 module, which houses filters for the Reactor Cooling Water System, and mechanical modules R151 (piping module), and KB11 and KB12 (equipment and filter modules).

Interior walls forming the first level of the Auxiliary Building (Level A2) have been completed and interior walls for the second level, Level A3, are nearing completion. Level A2 exterior walls are approximately 90% complete. Level A3 exterior walls are approximately 60% complete. All walls necessary for the backfilling for the Auxiliary Building foundation are now in place. Installation of waterproof membranes and backfilling against these exterior walls is proceeding.

The concrete floors for two of the six battery rooms in the Auxiliary Building have been placed. Subsequent to the close of the period, three additional concrete floors were placed. As for the remaining battery room, steel beams have been staged or set. Beam and deck installation continued in the remaining areas in the North half of the Auxiliary Building.

WEC/CB&I has determined that the current design of Wall 11 in the Auxiliary Building does not meet licensing requirements for protection of steam and water piping penetrations from possible tornado damage. Possible responses to resolve this issue are being reviewed with the Consortium.

Rebar, embeds and formwork were installed for the Annex Building Sump and concrete forming the sump has been placed.

## **5. Unit 2 Turbine Building**

Weld-out or bolt-up of structural steel for the Unit 2 Turbine Building continued at all levels in the Turbine Building structure. Rebar, formwork and embedment installation is nearing completion to support concrete placement for the turbine pedestal. The rebar installation and preparation for the placement of concrete at the 100 foot elevation around the Turbine Building is nearly complete.

## **6. Unit 3 Nuclear Island (NI)**

The Unit 3 CA04 module, which will house the reactor vessel, has been lifted and set in place. WEC/CB&I placed the first two layers of concrete (Layers A and B) that form the base for the Unit 3 Shield Building. Rebar, embedments and formwork are being installed to support placement of Layer C.

The installation of rebar and the placement of concrete continued during the period for sections of the interior and exterior walls of the Unit 3 NI Auxiliary Building. Installation of waterproof membranes and backfill work continued around the exterior of the Unit 3 NI.

## **7. Unit 3 Turbine Building**

The first (South) half of the Unit 3 Turbine Building basemat has been placed. The installation of rebar, embeds and formwork in preparation for placing the North section of the basemat is substantially complete. Staging, erection and bolt up of Structural Steel Module CH81A for the Unit 3 Turbine Building was on-going. Fabrication of the Unit 3 Structural Steel Modules CA80 and CA82 is complete and those modules are staged outside the Turbine Building footprint to be set in place when curing of the basemat and other preparations are complete. Weld-up of the Unit 3 Lower Condenser internals continued outside the Turbine Building footprint during the period.

## **8. Unit 3 Containment Vessel Fabrication**

Welding and coating of the Unit 3 CV Ring 1 is complete. Welding of the steel plates forming Unit 3 Ring 2 is complete and work on coating and welding of

attachment panels is on-going. Assembly and welding of the Ring 3 panels and the top head for Unit 3 are underway.

### **9. Cooling Towers**

Structural work on Cooling Tower 3B is substantially complete. The installation of rebar and the placement of concrete for Cooling Tower 2B are complete and erection of precast structural panels is underway. Electrical support structures and equipment are being installed for the Unit 2 and Unit 3 Pump Basins. The other cooling towers are substantially complete.

### **10. Unit 2 High-Side Switchyard**

Placement of concrete foundations and firewalls for the Unit 2 transformers in the Unit 2 High-Side Switchyard, which is located adjacent to the Unit 2 Turbine Building, was proceeding. Walls for four of the nine bays are complete.

### **11. Unit 2-3 Switchyard**

Investigations continue into the root cause of certain capacitor failures in Unit 2-3 Switchyard. Engineering firms are modeling the response of the Switchyard and certain capacitors in it to transients on the system. This work is being undertaken by the Switchyard contractor under warranty and the Switchyard remains energized during this investigation.

### **12. Offsite Water System (OWS)**

Construction of the OWS facility is complete. Punch list work and acceptance testing is underway.

### **13. Workforce**

Currently, approximately 3,500 WEC/CB&I personnel and subcontractor personnel are employed on site. Approximately 57% of these jobs are held by South Carolina residents.

## **B. Equipment and Fabrication**

Approximately 85% of the Unit 2 major equipment and 53% of Unit 3 major equipment have been delivered to the project. This amounts to approximately 69% of all major equipment for the project. Major equipment is any equipment with a cost of \$10 million or greater. During this period, progress continued with integrating the equipment into the project.



**1. Unit 3 Reactor Vessel**

The Unit 3 Reactor Vessel was received at the Port of Charleston in preparation for being shipped by rail to the site.

**2. Unit 3 Reactor Vessel Head Package**

Fabrication of the Unit 3 Reactor Vessel Head Package is complete and the unit is being prepared for shipment to the site.

**3. Unit 3 Turbine Generator**

The major components for the Unit 3 Turbine Generator have been delivered to the site.

**4. Unit 3 Surge Leg Segments**

The piping comprising the Unit 3 Pressurizer Surge Leg Segments was received on site.

**5. Steam Generators**

During the period, machining and welding of the Unit 3 Steam Generators continued at Doosan with no significant issues. The Unit 2 Steam Generators are in storage on site awaiting installation.

**6. Reactor Coolant Pumps (RCPs)**

Engineering and endurance testing of the RCPs has been completed. Disassembly and inspection are proceeding to determine the success of the test. It is expected that final test results will be presented in the third quarter of 2015. The RCPs delivery schedule supports construction need dates. This remains a focus area for the project.

**7. Pressurizers and the Passive Residual Heat Removal Heat Exchangers (PRHR)**

During the period, the hydrostatic testing for Unit 3 Pressurizer was completed. This unit is being prepared for shipment to the site, which is expected to occur in the third quarter of 2015. Supplemental Restraint Bars are being installed in the Unit 2 and Unit 3 PRHR Heat Exchangers at Mangiarotti's facilities. These restraint bars will provide additional support for internal components of the units and are intended to improve their durability and extend their service life. Progress is proceeding as expected and the equipment will be shipped to the site after installation of the restraining bars.

## **8. Reactor Coolant Loop (RCL) Piping**

During the period, Carolina Energy Solutions in Rock Hill, South Carolina, completed work on the Unit 3 RCL Hot and Cold Leg piping segments which included machining to install instrumentation connections. The piping is currently undergoing final dimensional checks in preparation for packaging and shipping to site.

## **9. Squib Valves**

Squib valve manufacturing is proceeding in support of the current construction schedule. Squib Valve Igniter reliability testing is on-going. Test results to date have been favorable.

## **10. Transformers**

The Units are designed with three single-phase main step-up transformers and an installed spare. The installed spare can be placed in service when maintenance on the others is performed. All four main step-up transformers for Unit 2 have been received on site, placed in storage, and filled with oil to protect them against degradation. Fabrication and testing of the four Unit 3 transformers are complete, and they are being prepared for shipment to the site. The Unit 3 transformers are being dedicated to Unit 2 so that they can be installed directly in the Unit 2 transformer bays when they arrive on the site. The current Unit 2 transformers will remain in storage until they are ready to be installed in Unit 3. Prior to lift and set of the stored transformers, all oil must be drained from them. By using the Unit 3 transformers for Unit 2, the Unit 3 Transformers will not be filled with oil until they are permanently installed in the Unit 2 transformer bays. This approach will require one less cycle of draining and refilling stored transformers.

## **11. Information Technology**

**Site Fiber Optic System.** Work on the fiber optic cable “back bone” for the Units is complete. Additional runs of fiber are being installed based on specific location requests as site development progresses.

**Configuration Management Information System (CMIS).** CMIS is the system that will store documents and data related to the design and engineering of the Units, the Quality Assurance/Quality Control (QA/QC) records of equipment, operating programs and protocols for the Units. SCE&G is working internally and with the software vendor on performance tuning the CMIS to address issues with system latency. The CMIS is also being configured to house the Master Equipment List (MEL) in support of the work management software system (the

Computerized Maintenance Management System or CMMS) for the Units. In addition, SCE&G is integrating all plant procedures into the FileNet system which will house these records after they are drafted and approved. SCE&G expects the first deliverable for workflow procedures to be included in CMIS by the third quarter of 2015.

**Work Management System (WMS).** During the period, SCE&G began integrated testing of the major software modules for the WMS and work is progressing as expected.

**Handover and Turnover of Proprietary Information.** Work is proceeding on the plan and schedule for the handover and turnover from WEC/CB&I to SCE&G of the proprietary data and engineering and other information necessary to operate and maintain the Units. The pace of work is accelerating. A project execution plan is being prepared for approval by WEC/CB&I and SCE&G.

## **12. Module and Shield Building Panel Fabrication and Assembly**

Challenges related to fabrication of submodules continue to be a focus area of the project.

**The Revised Module Production Schedule.** As indicated in Section II.A., the fabrication and delivery of Shield Building panels and structural submodules for the Unit 3 CA01 module are critical path items for the project. Accordingly, production of these panels and submodules, and other structural modules, remains a very important focus area for the project. SCE&G maintains a presence on site at CB&I-LC to monitor activities and interact with CB&I-LC leadership on a regular basis. In addition to its other QA/QC resources, SCE&G also maintains an inspector on site at NNI, MetalTek-SMCI Division (SMCI), and Oregon Iron Works/Greenberry. WEC/CB&I and NNI have developed a mitigation strategy to increase the rate of Shield Building panel production by increasing the fabrication capabilities at the NNI site. SCE&G is awaiting confirmation from WEC/CB&I that this mitigation strategy remains viable. Mitigation is required for NNI's production of Shield Building panels to support the current construction schedule.

**Unit 2 Submodules.** All submodules for the Unit 2 CA01 and CA02 modules are on site and substantially fabricated into modules. Two of 17 panels comprising the Unit 2 CA03 module are on site. Due to production issues at SMCI in Lakeland, Florida, and with input from SCE&G, WEC/CB&I has decided that parts and materials for future Unit 2 CA03 submodules will be shipped from SMCI to the Jenkinsville site in kit form where they will be

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assembled and welded together by CB&I personnel. Two Unit 2 CA03 submodules which are in production at the Lakeland site will be finished there.

**Unit 3 Submodules.** Work continued at Oregon Iron Works and CB&I-LC facilities on the Unit 3 CA20 submodules. Twenty six of 72 submodules are on site. Four of 47 submodules for the Unit 3 CA01 module were received from the Toshiba & IHI Corporation facilities in Japan. After the close of the period, WEC/CB&I made the decision to transfer fabrication of the Unit 3 CA03 submodules from SMCI to CB&I-LC in response to fabrication issues at the SMCI facility. Recent improvements in the timeliness and quality of work done at CB&I-LC support this decision.

**Mechanical Modules.** Mechanical modules for both Units are being fabricated at CB&I-LC and the CB&I Island Park facilities in Beaumont, Texas. During the period, the fabrication of higher-priority Unit 2 mechanical modules and the assembly of the first floor Auxiliary Building mechanical modules continued on site to accelerate production.

**Shield Building.** Seventy-one out of the 167 panels which will comprise the steel walls of the Unit 2 Shield Building were received on site from NNI. Eleven of the Unit 3 Shield Building panels are on site. SCE&G and WEC/CB&I are working with NNI to resolve issues related to meeting targeted tolerances during fabrication and racking during shipping to reduce the time required for on-site fit up. Resolving these issues will benefit the schedule for completing the Shield Building.

**Conclusion.** Senior management from both SCE&G and WEC/CB&I continue to monitor the fabrication and delivery process related to submodules and panels. WEC personnel continue to provide on-site engineering support for production at CB&I-LC. SCE&G maintains a permanent resident inspector at the CB&I-LC facility, the SMCI facility, and the NNI facility. The Oregon Iron Works and Greenberry facilities share a permanent resident inspector. The fabrication of the submodules continues to be an important area of focus for the project.

### C. Quality Assurance and Quality Control

The Quality Systems group continued its QA/QC oversight activities to ensure that WEC/CB&I is meeting quality requirements on site, internally, and at suppliers and sub-suppliers facilities. During the second quarter of 2015, SCE&G focused on the Quality Assurance Programs (QAP) of the structural and mechanical module suppliers and their effective QAP implementation. SCE&G's QA/QC oversight activities placed emphasis on auditing and oversight of the implementation of corrective action programs to improve module supplier

performance. This included observing CB&I surveillance and audit activity at module suppliers, including CB&I-Lake Charles, Oregon Iron Works, Greenberry, and SMCI. During the period, SCE&G identified opportunities for CB&I to improve the effectiveness of the QA/QC audits of its module suppliers by implementing the auditing program in a more performance-based manner, and increasing source inspection activities at Lake Charles.

During Witness and Hold point inspections at Mangiarotti's facilities, SCE&G reviewed final data packages for the Unit 3 Pressurizer, and assessed the status of the supplemental restraint bar modifications for the PRHR. SCE&G inspectors identified issues regarding the quality of parts received from a sub-supplier for the supplemental restraint bar modification. The parts in question were not intended for use in this project. Nonetheless, SCE&G will follow up during subsequent visits to ensure adequate corrective actions have been effectively implemented. Witness and Hold Point activities were also conducted at Carolina Energy Solutions on the reactor coolant loop piping, and on the assembly and packaging of control rod travel housings at Westinghouse's Newington facility. No other significant issues were noted during Witness and Hold point observations during the quarter.

The Quality Systems group audited the Consortium's Corrective Action Program related to storage, preventive maintenance and preservation of equipment, and observed a Westinghouse internal audit of Supplier Oversight. This audit is related to the Stop Work Order imposed earlier by CB&I related to the on-site storage, preventive maintenance and preservation of equipment before and after installation. The results of the storage and preservation audit indicated that the program is not fully implemented and more aggressive corrective action is being required to bring resolution. SCE&G is currently working with CB&I to identify a corrective action plan to drive improvement in this area. In addition, the Quality Systems group conducted internal audits of SCE&G's Procurement program, ASME Quality Assurance Program Plan, New Nuclear Deployment (NND) Project Oversight, and the Fitness for Duty Program. No significant issues were noted during performance of SCE&G internal audit activities. Quality Systems personnel also participated in the CB&I Welding Program audit. Nine findings were issued as a result of the audit, of which none were significant.

The Quality Systems group continued participation in CB&I oversight activities at the CB&I-Laurens pipe spool production facility. CB&I-Laurens fabricates the bundles of piping that are used in the production of submodules and mechanical modules. Currently, CB&I-Laurens is under a self-imposed Stop Work Order related to the implementation of its corrective action program. The Stop Work Order is scheduled to be lifted in phases beginning the third quarter of 2015 as the required corrective actions are completed. Periodic updates to the status of

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the Stop Work Order are reviewed by Quality Systems. A Quality Systems management meeting has been scheduled with CB&I-Laurens to discuss corrective actions to improve performance.

Quality Systems personnel focused on field observations of welding and NDE activities on sub-modules and concrete placement. Quality Systems also continues to monitor activities related to improving welding documentation packages.

SCE&G Quality Systems management met with Westinghouse management at Cranberry, Pennsylvania to discuss the result of a recent NRC inspection. The NRC identified concerns with implementation of Westinghouse QA/QC activities related to audits, corrective action, and supplier oversight. SCE&G reviewed the resulting corrective action plans with Westinghouse management. In addition, Westinghouse's actions in response to the NRC inspection concerns have been reviewed. The implementation of Westinghouse identified corrective actions will be assessed as part of an upcoming audit of Westinghouse by the Nuclear Procurement Issues Committee (NUPIC).

#### **D. Licensing and Permitting**

As licensee for the Units, SCE&G is directly accountable to the NRC for contractors meeting nuclear safety-related QA/QC requirements both at the project site and at the facilities of its component manufacturers and equipment suppliers worldwide. WEC/CB&I, through the EPC Contract, is responsible to SCE&G for making sure that these requirements are met.

##### **1. NRC Inspections**

During the period, the NRC issued its First Quarter, 2015, Integrated Inspection Report. One Green Non-Cited Violation (NCV) was documented for "Design Control" for a calculation related to placement of concrete reinforcing bars determined not to be sufficiently conservative as an engineering matter. A Green finding is the least significant in the NRC Construction Reactor Oversight Process. It qualitatively indicates licensee performance is acceptable and that NRC Construction Reactor Oversight Process cornerstone objectives are fully met.

During the period, the NRC conducted an annual Corrective Action Program (CAP) / Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Management Inspection, a Unit 2 Reactor Vessel ITAAC Inspection, and a Civil ITAAC Inspection. There were no findings associated with any of these inspections.

During the period, the NRC issued the Special Inspection Report from the inspection performed in the previous period associated with the minor damage to the Unit 2 CV that occurred last quarter during concrete coring operations. Two potential Green NCVs were documented: (1) "Instructions, Procedures, and Drawings" for damage to safety-related structural rebar as a result of failure to implement appropriate procedures for coring into concrete, and (2) "Design Control" for inadvertently damaging the Unit 2 CVBH as a result of failing to adequately verify a design change that was implemented for installing safety-related rebar after concrete placement by coring into concrete.

## **2. License Amendment Requests (LARs)**

During the period, SCE&G filed five new LARs with the NRC. The NRC has granted a total of 31 LARs. Three LARs were granted during the reporting period. Nineteen LARs were pending on June 30, 2015. For ease of reference, a report that tabulates all the LARs submitted by SCE&G to the NRC as of June 30, 2015, is attached as Appendix 5.

During the reporting period, a need was identified for two LARs (LAR 15-09 and LAR 15-08) related to the use of weldable couplers.

LAR 15-09 was submitted in May and requests an amendment allowing the use of a newer edition (AWS D1.1:2000) of the currently required Structural Welding Code (AWS D1.1:1992) for weld design on structural steel components. The requested amendment is expected to be issued during the third quarter of 2015. A PAR No Objection Letter was issued related to LAR 15-09 which allowed the Unit 2 concrete Layers 3 & 4 to be placed in the Unit 2 NI.

LAR 15-08 is in development and will request an amendment to allow testing to determine the strength of welded couplers utilizing a combination of partial joint penetration and fillet welds. Supporting tests for developing LAR 15-08 are being completed. Submittal of LAR 15-08 is expected during the third quarter of 2015 with a PAR requested during the fourth quarter.

## **3. Inspections, Tests, Analyses and Acceptance Criteria ("ITAAC")**

During this period, SCE&G submitted four ITAAC Closure Notifications to the NRC. Of the 22 submitted ITAAC Closure Notifications, 20 have been verified complete by the NRC.

## **4. Major Construction Permits**

No major construction-related permits are outstanding. Other construction-related permits are anticipated to be obtained in the ordinary course of administering this project.

**E. Engineering****1. Engineering Completion Status**

As of June 30, 2015, the Units 2 & 3 plant design packages issued for construction (IFC) are 90% complete. Delivery of design documents for construction continues to be a focus area for SCE&G.

**2. Site Specific Design Activities**

Site specific design work is 94% complete. Design work is associated with support of the following site specific systems: Circulating Water System, Power Distribution Center, which is part of the Main AC Power System, Uninterruptible Power Supply, Raw Water System (RWS), OWS, Service Building, and High-Side Switchyard.

**F. Training**

**1. Plant Reference Simulators (PRSs) and Commission (NRC) - Approved Simulators (CASs).** Successful Integrated Systems Validation (ISV) testing is necessary for NRC to approve a plant simulator to serve as a PRS. During the first quarter of 2015, WEC conducted the required ISV testing on hardware and software similar to the Unit 2 and 3 plant simulators. During this period, SCE&G, WEC and the NRC continued to evaluate the ISV testing results and to develop a strategy to accomplish delivery of the PRSs as soon as the ISV results have been compiled and issues raised by review of those results have been resolved. Current projections are that the ISV testing results will be resolved by the end of the second quarter of 2017, and the PRSs completed by 2018. WEC and SCE&G are working to expedite this process.

As reported last quarter, because this PRS certification schedule did not support the integrated operator simulator exams scheduled for 2015, SCE&G requested the NRC to approve the simulators as CASs under 10 CFR 55.46(b).

In support of CAS approval, the NRC staff continued its work on a Safety Evaluation Report (SER) to validate that simulators comply with ANSI/ANS (American National Standards Institute/American Nuclear Society) Standard 3.5 which establishes the functional requirements for simulators used in operator training and examination. Approval of the simulators as CASs will allow the upcoming integrated operator simulator exams to be conducted using them. The NRC is expected to issue the SER in support of CAS approval during the third quarter of 2015.



**2. Initial Licensed Operator (ILO) Training.** During the period, the first ILO class, which currently numbers 21 students, completed an NRC audit exam at VCSN to determine which candidates were ready to take the official NRC exam. Fourteen students passed the audit and were approved to take the NRC exam. Based on the CAS certification delay, the class took only the written portion of the exam. The results of the exam are officially still in the review phase with the NRC. Preliminary results indicate a lower than expected pass rate. A root cause analysis (RCA) of the failure rates on both the NRC audit exam and the NRC written exam is currently under way using SCE&G, Southern Nuclear Company (SNC), and WEC personnel, and industry training and licensing experts. The second ILO class's NRC written and integrated operator simulator exams scheduled for November 2015 has been postponed to the second quarter of 2016. A third ILO class is currently in the initial licensed operator systems portion of their training. The NRC exam date for this third class of ILO candidates is currently under review and anticipated to be scheduled in 2017.

**3. Maintenance and Technical Staff Training.** During the period, trainees in all of the Maintenance and Technical programs participated in initial training sessions for their disciplines including Tier 1 initial training, engineering orientation and fundamentals, Tier 2 common, and Tier 2 discipline-specific training. There are six disciplines and multiple cohorts in each discipline. During the time between training sessions each discipline was involved in assisting Training in preparation for the next training session, station procedure and program development activities.

## **G. Operational Readiness**

**1. Mission Critical Hiring.** For 2015, SCE&G identified 71 positions to be filled for the year with 35 identified as mission critical hires. By the close of the period, twenty positions were filled with fourteen of those being mission critical.

**2. Programs and Procedures.** The Integrated Operational Readiness Schedule continues to be used to assess SCE&G's ability to meet Operational Readiness milestones as the project progresses. Although the schedule continues to be dynamic, the procedure development program is approximately 10% complete. Engineered programs continue to be developed per the schedule and targets are being met.

**3. Collaborative Equipment Reliability Program.** The collaborative project with SNC to classify structures, systems and components and to establish maintenance strategies for the AP1000 continues. Of the 80 AP1000 standard plant systems, work on 73 is complete for Maintenance Rule classification, work on 68 is complete for Preventative Maintenance strategy development and work on 66 is complete for Functional Equipment group assignments. This project is expected to be complete by the end of 2016.

**4. Materials Procurement Engineering.** SCE&G and WEC/CB&I remain in discussion related to the delivery method and formatting of critical spare parts inventory needed for the Initial Test Program.

**5. Master Equipment List (MEL)/Component Labeling.** During this period, WEC assigned a dedicated resource to resolve issues related to equipment identification and methods to be used to label and tag identified equipment. Work was performed late in this quarter to provide the Consortium with specific details related to SCE&G's need for more comprehensive definition of its requirements related to the MEL and subsequent labeling of components. The MEL is a list that identifies the attributes for assets which are permanent plant equipment used in the Units. Progress has been made in this area and continued monitoring will be performed until a successful outcome is achieved.

## **H. Change Control/Owners Cost Forecast**

**1. Plant Layout Security.** During this period, WEC/CB&I provided SCE&G with a draft change order concerning changes in plant layout to enhance the physical security of the Units. Engineering work required to support this scope of work continued during the period. The cost of the change order for this phase of work is estimated to be \$20.4 million.

**2. Cyber-Security Upgrades Phase II.** SCE&G and WEC/CB&I continued to work on a change order related to Phase II of the work to upgrade cyber-security protections for the Units. The agreed upon scope of work and associated costs for this phase of the plan is \$18.8 million and that price is based on the assumption that WEC/CB&I would be conducting a similar scope of work for SNC. WEC/CB&I reports that SNC has not yet agreed to proceed with the change order and thus the costs of the change order may be impacted. Moreover, SCE&G and WEC/CB&I have been unsuccessful in their efforts to date to resolve certain details related to this scope of work. As a result, SCE&G is assessing other options for meeting its cyber security needs. In the meantime, WEC/CB&I has ceased activities on the project.

**3. Other Change Orders.** Negotiations continued on: (1) the final language for Change Order 16 (delay in receiving the combined operating

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licenses, Shield Building redesign, module redesign, and Unit 2 rock conditions) and (2) Change Order 17 (equipment required to be installed in the OWS for the removal of bromide from raw water during treatment, the transfer of certain CB&I start-up construction support Time & Material scopes of work and associated dollars to the Target and Firm price categories, and other miscellaneous items). Costs related to Change Order 16 were approved by the Commission in Order No. 2012-884. There will be no increase to EPC Contract costs as a result of Change Order 17.

**4. Notices of Change.** During the period, SCE&G received three Notices of Change under the EPC Contract. One Notice of Change was related to increased costs for craft labor. The second Notice of Change is related to the increased costs for redesign of the door to the Shield Building to increase its resistance to aircraft impact. The third Notice of Change is related to the potential NRC regulatory change to the Interim Staff Guidance (ISG-08) regarding the set point control program for the AP1000 units. SCE&G rejected the two Notices of Change related to the increased costs for craft labor and door redesign. As to the third Notice of Change, SCE&G is awaiting definitive information on whether the NRC will change the regulation.

SCE&G has not received change orders yet for the two Notices of Change received last period regarding unanticipated subsurface conditions at the RWS intake cofferdam, intake channel foundation, and RWS platform, and relating to CB&I's additional costs in supporting SCE&G's oversight personnel assigned to Greenberry Industrial LLC, a fabricator for CA floor modules. SCE&G does not anticipate rejecting these change orders. These items could have cost implications.

**5. Schedule Mitigation for Shield Building Panels.** SCE&G has received a letter with an estimated cost breakdown for schedule mitigation for the Shield Building panels. WEC/CB&I subcontracted the construction of the steel panels which will form the walls of the Shield Buildings to NNI in Newport News, Virginia. Schedule delay related to the finalization of design of these panels have placed the fabrication of these panels on the critical path for timely completion of the project. CB&I and NNI are in discussions to expand its manufacturing facility to allow for additional panels to be worked in parallel, thus mitigating potential schedule delay. Based on the cost estimate received this period, SCE&G estimates the cost of this expansion will add \$12.1 million to the EPC Contract cost. As indicated in Section II.A above, SCE&G is awaiting confirmation that the Shield Building mitigation plan remains viable.

**6. Ovation and Common Q Instrumentation and Control (I&C) Maintenance Training Systems.** During this period, CB&I continued to work on a cost proposal to present to SCE&G concerning the Ovation and Common Q

systems. These are the I&C software programs that will be used to operate the Units. Maintenance training systems are required to support training on the Ovation and Common Q systems without interfering with the use of the primary systems for operations. Maintenance training systems also allow software maintenance to be conducted off-line. CB&I proposed the cost of the change order associated with acquiring hardware and software for these maintenance training systems at approximately \$1.2 million. SCE&G is requesting additional information on the cost proposal and evaluating other options for the Ovation maintenance training system.

**7. Simulator Development System (SDS).** During this period, WEC provided a cost proposal of \$900,000 for a new SDS that will be a scaled down version of the PRS. SCE&G has determined that the schedule for training licensed operator candidates and senior operators and for developing and validating NRC license exam scenarios will require nearly continuous use of the PRS for the balance of the project. This does not provide sufficient time for upgrades, modifications and routine software maintenance of the PRS. The SDS will include a complete copy of the PRS software which can be serviced and modified without interfering with the use of the PRS. SCE&G is negotiating the cost proposal with WEC.

**8. Warehouse Fire Safety.** During this period, SCE&G continued to negotiate a draft change order with WEC/CB&I regarding the Warehouse Fire Safety to upgrade the remote monitoring capabilities of the fire and security systems in three of the on-site warehouses that serve the project. This upgrade will promote safety and increase the limits of available insurance coverage. The cost of the change order is estimated to be \$121,000.

**9. Corrective Action Program Interface (CAP-I).** The CAP-I provides for the administrative interface during construction between SCE&G's corrective action program and the WEC/CB&I programs. During the period, WEC provided a draft change order to SCE&G regarding the CAP-I. WEC's cost proposal for the CAP-I was \$1.1 million. SCE&G is evaluating the scope of work and is negotiating the cost of the change order.

## **I. Transmission**

**1. VCS2-Lake Murray 230 kV Line No. 2 and Segment of the VCS2-St. George 230kV Line No. 1.** The VCS2-Lake Murray 230 kV Line No. 2 is energized. SCE&G plans to energize the segment of the VCS2-St. George 230 kV Line No. 1 that was built as a part of this project when the remaining segment of the VCS2-St. George 230 kV Line No. 1 has been completed.

**2. The Remaining Segment of VCS2-St. George 230 kV Line No. 1 and the VCS2-St. George 230 kV Line No. 2.** The VCS2-St. George 230 kV Line No. 2 segment between VCS2 and the Lake Murray Substation is complete. Construction of both the No. 1 and No. 2 lines from the Lake Murray Substation to the point where they cross Interstate 20 towards the site of the new Saluda River Substation is complete and is continuing on the Saluda River Substation side of Interstate 20. During the period, construction was completed for both the No. 1 and No. 2 lines beginning in the Orangeburg area heading south toward the St. George Switching Station. Construction commenced in the period for both the No. 1 and No. 2 lines in the Dixiana area heading south toward Gaston.

**3. St. George Switching Station.** In prior periods, the overall engineering layout of the station and the topographic surveys of the site were completed and the official jurisdictional determination of wetlands was received from the Army Corps of Engineers. During the period, the storm water permit and the Coastal Zone Consistency certification were received from the Department of Health and Environmental Control. Grading on the site has commenced and the pad for the substation has been brought to final elevation. The current scheduled completion date is June 2016.

**4. Saluda River Substation.** Construction continued on the Saluda River Substation. At the end of the period, the main power transformer was installed, tested, and all primary connections were made. All of the 230 kV and 115 kV circuit breakers have been installed and have passed all electrical testing, and their primary conductors are connected. All conduit runs from the cable trough to the devices have been installed and all of the relay panels have been installed in the switch house. All of the secondary and control cables have been pulled and 90% of the terminations are complete. All ancillary devices have been completely installed and electrically tested. The final fence modifications have been completed and finish grading of the site is 80% complete. Final drainage implementations will be made in the third quarter 2015 and gravel will be installed. Relay panel checks are 50% complete. SCADA communications will be installed in the third quarter 2015. The scheduled completion date is August 2015.

**5. Canadys-Sumter 230 kV line.** During the period, construction activities began on the rebuilding of the Canadys to St. George segment of the Canadys-Sumter 230 kV line to increase the capacity of the line. This segment consists of approximately 10.5 miles and will fold into the new St. George Switching Station. Construction activities during the quarter included installation of access roads, protective mats in wetlands areas, and other construction access facilities in preparation for the delivery of construction materials. The scheduled completion date is mid 2016.

**6. Wateree-St. George-Williams 230 kV line.** Construction activities will begin later in 2015 on the rebuilding of the St. George to Summerville segment of the Wateree-St. George-Williams 230 kV line to increase the capacity of the line. This segment consists of approximately 30.5 miles and will fold into the new St. George Switching Station. The scheduled completion date is late 2017.

### **III. Anticipated Construction Schedules**

The Revised, Fully-Integrated Construction Schedule establishes a new substantial completion date for Unit 2 of June 19, 2019, and a new substantial completion date for Unit 3 of June 16, 2020. By the close of this period, 106 of the 146 milestones for reporting purposes are complete. The remaining 40 have been delayed, and 33 have been delayed by more than 18 months compared to the schedule for the project as approved in Order No. 2012-884. This increase in delayed milestones is the result of the recognition of the Revised, Fully-Integrated Construction Schedule as the current schedule for the project for reporting and project management purposes. In the March 2015 Update Petition, SCE&G is requesting that new milestone dates be established based on the current schedules. Pending approval of the new schedules, which the Commission is considering under Docket No. 2015-103-E, the current schedules and forecasts presented in this report are compared against those approved in Order No. 2012-884.

**Appendix 1** to this quarterly report lists and updates each of the specific milestones constituting the anticipated construction schedules for the Units pursuant to S.C. Code Ann. § 58-33-270(B)(1) and Order No. 2012-884.

### **IV. Schedules of the Capital Costs Incurred Including Updates to the Information Required by S.C. Code Ann. § 58-33-270(B) (6) (the Inflation Indices)**

The Capital Costs section of this report (Section IV.A.) provides an update of the cumulative capital costs incurred and forecasted to be incurred in completing the project. These costs are compared to the cumulative capital cost targets approved by the Commission in Order No. 2012-884. The approved capital cost targets have been adjusted to reflect the currently reported historical escalation rates. There has not been any use by the Company of the capital cost timing contingencies that were approved by the Commission in Order No. 2009-104(A). The Inflation Indices section (Section IV.B.) of this report provides updated information on inflation indices and the changes in them.

#### **A. Capital Costs**

**Appendix 2** shows the Cumulative Project Cash Flow target as approved in Order No. 2012-884 and as updated for escalation and other Commission-approved adjustments under the heading **“Per Order 2012-884 Adjusted.”**

**Appendix 2** also shows the cumulative cash flow for the project based on actual expenditures to date and the Company's current forecast of cost and construction schedules under the heading "**Actual through June 2015 plus Projected.**"

As shown on **Appendix 2**, the projected expenditure for the project for the 12 months ended December 31, 2015, is approximately \$752 million. As shown on **Appendix 2**, line 39, the cumulative amount projected to be spent on the project as of December 31, 2015, is approximately \$3.575 billion. As shown on **Appendix 2**, line 18, the Cumulative Project Cash Flow target approved by the Commission for year-end 2015 adjusted for current escalation and WEC/CB&I billing differences is approximately \$4.633 billion. As a result, the cumulative cash flow at year-end 2015 is approximately \$1.058 billion less than the target.

For comparison purposes, **Appendix 3** sets out the cash flow schedule for the project as it was approved in Order No. 2012-884. **Appendix 3** does not include any adjustments to the cash flow schedule for changes in inflation indices or adjustments in capital cost schedules made by the Company. The AFUDC forecast presented on **Appendix 3** is the AFUDC forecast that was current at the time of Order No. 2012-884.

#### **B. Inflation Indices**

**Appendix 4** shows the updated inflation indices approved in Order No. 2009-104(A). Included is a history of the annual Handy-Whitman All Steam Index, South Atlantic Region; the Handy-Whitman All Steam and Nuclear Index, South Atlantic Region; the Handy-Whitman All Transmission Plant Index, South Atlantic Region; and the Chained GDP Index for the past 10 years.

#### **V. Updated Schedule of Anticipated Capital Costs**

The updated schedule of anticipated capital costs for Units 2 & 3 is reflected in **Appendix 2**.

#### **VI. Conclusion**

In the March 2015 Update Petition, SCE&G is requesting that the Commission establish new BLRA milestone dates and construction cost schedules for the project based on the Revised, Fully-Integrated Construction Schedule based substantial completion dates for Unit 2 of June 19, 2019, and for Unit 3 of June 16, 2020.

New cost schedules presented in the March 2015 Update Petition indicate that the cost of the project, including updates in SCE&G's cost and change orders, increased from \$4.5 billion, as approved in Order No. 2012-884, to \$5.2 billion in 2007 dollars. The total project capital cost is now estimated at approximately \$5.2 billion (SCE&G's

PUBLIC VERSION

portion in 2007 dollars) or \$6.9 billion including escalation and allowance for funds used during construction (SCE&G's portion in future dollars).

The Company maintains a staff that monitors the work of its contractors and continues to monitor closely areas of concern related to the cost and schedule for the project. The Company will continue to update the Commission and the ORS of progress and concerns as the project proceeds.



**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

Acronym or Defined Term	Reference
AFUDC	Allowance for Funds Used During Construction.
AP1000	The WEC designed Advanced Pressurized water nuclear reactor of approximately 1000 megawatts generating capacity.
APOG	A group of utilities who have submitted applications for AP1000 COLs.
BLRA	The Base Load Review Act, S.C. Code Ann. § 58-33-210 et seq. (Supp. 2009).
CA	The designation for specific pre-fabricated structural modules that form part of the reactor building or auxiliary building, such as Module CA20.
CAP	Corrective Action Program.
CAR	A Corrective Action Report related to design, engineering or construction of the Units, or related processes, that must be corrected.
CAS	Commission(NRC)-Approved Simulators
CB&I	Chicago Bridge & Iron, a sub-contractor on the project which, upon acquisition of the Shaw Group, became a member of the Consortium and a prime contractor on the project.
CB&I-LC	CB&I Lake Charles - the module fabrication unit formerly known as Shaw Modular Solutions or SMS and located in Lake Charles, Louisiana.
CB&I Services	A subsidiary of CB&I that is fabricating the containment vessels on site under contract with Westinghouse.
CES	Carolina Energy Solutions, a subcontractor located in Rock Hill, South Carolina.
CMIS	Configuration Management Information System.
COLs	Combined Operating Licenses for construction and operation of a nuclear unit issued by the NRC.

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

Acronym or Defined Term	Reference
COLA	A Combined Operating License Application.
Commission	The Public Service Commission of South Carolina.
Consortium	The joint venture between WEC and CB&I to construct the Units under the terms of the EPC Contract.
CR	A Condition Report communicating and memorializing concerns with the design, engineering or construction of the Units, or related processes, which in some cases can become the basis for a Corrective Action Report.
CV	The Containment Vessel which provides containment for the reactor vessel and associated equipment.
CVBH	The Containment Vessel Bottom Head that forms the bottom of the Containment Vessel.
CWIP	Construction Work in Progress.
CWP	Circulating Water Pipe.
CWS	The Circulating Water System –the system that will transport waste heat from the turbines to the cooling towers.
Cyber Security	Technologies, processes and practices designed to protect networks, computers, programs and data from attack, damage or unauthorized access.
DCD	Design Control Document which is approved by the Nuclear Regulatory Commission and sets forth the approved design of a nuclear reactor.
Departures	Departures are minor deviations from the approved Design Control Document included in the licensing basis for the Units that do not rise to the level requiring a LAR.
EMD	Electro-Mechanical Division of Curtiss-Wright Corp., the sub-contractor for the Reactor Coolant Pumps.

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

Acronym or Defined Term	Reference
EPA	The United States Environmental Protection Agency.
EPC Contract	The Engineering, Procurement and Construction Agreement for construction of the Units entered into by SCE&G and WEC/CB&I.
ERB	The Emergency Response Building which provides office space and housing for the emergency response personnel and equipment for all three units.
Exit Debriefing	A meeting held between the NRC and the licensee at the conclusion of an NRC inspection to discuss the results of the inspection.
FERC	The Federal Energy Regulatory Commission.
Fixed/Firm	Prices under the EPC Contract which are either fixed or are firm but subject to defined escalation rates.
GDP	Gross Domestic Product.
HFE/ISV	Human Factors Engineering/Integrated Systems Validation –part of the development of a training simulator for the Units.
HL or Hot Leg	That part of the Reactor Cooling Loop that transports steam to the steam generators.
HLD	Heavy Lift Derrick - the derrick that was erected on site to move large modules and equipment.
IBF	Subcontractor of Tioga that manufactures the Reactor Coolant Loop piping.
ICN	ITAAC Closure Notification – the letter from the licensee to notify the NRC that an ITAAC is complete in accordance with 10 CFR 52.99(c)(1).
IFC	Issued for Construction – engineering drawings that include information necessary for construction of specific structures, systems and components.
ILO	Initial Licensed Operator.

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

Acronym or Defined Term	Reference
INPO	Institute of Nuclear Power Operations.
IPS	Integrated Project Schedule for licensing and construction of the Units.
ISV	Integrated Systems Validation.
ITAAC	Inspections, Tests, Analyses, and Acceptance Criteria which are the inspections, tests, analyses and acceptance criteria that the NRC has determined to be necessary and sufficient to demonstrate that a nuclear unit has been constructed and will operate in conformity with the COLs, the Atomic Energy Act of 1954, as amended, and the NRC's regulations.
LAR	License Amendment Request – A formal request made by VCSNS to amend the combined operating license, its appendices, or its associated bases.
LNTP	Limited Notice to Proceed authorizing a vendor to commence specific work.
LSS	Limited Scope Simulator –a training simulator with limited functionality that can be used for the initial stages of operator training.
MAB	Module Assembly Building - a building on site where large modules will be constructed and equipment will be prepared for installation in a space that is protected from the elements.
Mangiarotti	Mangiarotti Nuclear, S.p.A.
MEL	Master Equipment List – a list that identifies the attributes for assets which are permanent plant equipment used in the plant.
NEI	Nuclear Energy Institute.
NI	Nuclear Island, comprising the steel containment vessel, the reactor building, and the auxiliary building.
NLC	Nuclear Learning Center - a training facility operated by SCE&G at the Jenkinsville site.

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

Acronym or Defined Term	Reference
NLO	Non-Licensed Operator.
NND	The New Nuclear Deployment Team within SCE&G.
NNI	Newport News Industrial - a module fabrication subcontractor to WEC/CB&I.
NPDES	National Pollutant Discharge Elimination System.
NRC	The United States Nuclear Regulatory Commission.
ORS	South Carolina Office of Regulatory Staff.
OWS	Off Site Water System – the system that withdraws water from Monticello Reservoir and provides potable and filtered water for the Units.
PAR	Preliminary Amendment Request - A formal request made by VCSNS which allows VCSNS to proceed at its own risk with work consistent with an amendment request contained in an LAR prior to approval.
PDC	Power Distribution Center - prefabricated, modular enclosures housing electrical equipment such as switchgear, motor control center equipment and other auxiliary equipment.
Pike	Pike Energy Solutions, a contractor for transmission and switchyard related work.
PRA	Probabilistic Risk Assessment.
PRHR	The Passive Residual Heat Removal Heat Exchanger unit –a heat exchanger unit that is part of the passive safety system which provides cooling to the AP1000 reactor during emergency situations.
PRS	Plant Reference Simulator – a training simulator with full functionality that can be used in all stages of operator training.
PWS	The Potable Water System - which provides potable water to the site.

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

Acronym or Defined Term	Reference
QA	Quality Assurance – The planned and systematic activities implemented in a quality system so that the quality requirements for a product or service will be fulfilled.
QAP	Quality Assurance Program
QA/QC	Quality Assurance/Quality Control.
QC	Quality Control – The observation techniques and activities used to fulfill requirements for quality.
RAI	Requests for Additional Information issued by the NRC staff to license applicants.
RCA	Root Cause Analysis – identification and evaluation of the reason for non-conformance, an undesirable condition, or a problem which (when solved) restores the status quo.
RCL	The Reactor Coolant Loop – the piping and related equipment that transports heat from the reactor to the steam generator.
RCP	The Reactor Cooling Pump which forms part of the Reactor Coolant System.
RCS	The Reactor Coolant System - the complete system for transferring and transporting heat from the reactor to the steam generator.
RFI	Requests for Information issued by the NRC staff to licensees.
ROW	Right-of-way.
RT	Radiographic Testing - a nondestructive testing method of inspecting materials for hidden flaws by using the ability of short wavelength electromagnetic radiation (high energy photons) to penetrate various materials.
RV	Reactor Vessel.
RWS	Raw Water System – the system for withdrawing and transporting raw water from the Monticello Reservoir.

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

Acronym or Defined Term	Reference
SAT	Site Acceptance Testing.
SCDHEC	The South Carolina Department of Health and Environmental Control.
SCDNR	The South Carolina Department of Natural Resources.
SCE&G or The Company	South Carolina Electric & Gas Company.
SCPSC	The Public Service Commission of South Carolina.
SDS	Simulator Development System
SMS	Shaw Modular Solutions, LLC.
SNC	Southern Nuclear Company – a subsidiary of Southern Company and licensed operator of the Vogtle Nuclear Units and two other nuclear plants.
SRO	Senior Reactor Operator.
SROC	Senior Reactor Operator Certification.
Target	Costs under the EPC Contract where targets have been established but where SCE&G pays actual costs as incurred.
TEi	Thermal Engineering International – a subsidiary of Babcock Power which manufactures moisture separator reheaters and other power plant equipment.
Units	V. C. Summer Nuclear Station Units 2 & 3.
Update Docket	A proceeding under the BLRA seeking Commission approval of updated cost and construction schedules for the Units.
UPS	Uninterruptible Power Supply.

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

Acronym or Defined Term	Reference
URI	Unresolved Items – A term used by the NRC during inspections for items that require further action.
USACOE	The United States Army Corps of Engineers.
VCSNS or VCSN	V. C. Summer Nuclear Station.
WEC	Westinghouse Electric Company, LLC.
WEC/CB&I	The consortium formed by Westinghouse Electric Company, LLC and CB&I.
WMS	Work Management System.
WTP	The off-site Water Treatment Plant which will take water from Lake Monticello and treat it to potable water standards.
WWS	The Waste Water System – the system for collection, treatment and disposal of domestic waste water generated on site.
YFS	The Yard Fire System – the system that provides fire detection and protection outside of the plant.
ZBS	The Offsite Power System –the system which provides electrical power to the site.



**APPENDIX 1****V. C. Summer Nuclear Station Units 2 & 3**

**Quarterly Report to the South Carolina Office of Regulatory Staff  
Submitted by South Carolina Electric & Gas Company  
Pursuant to Public Service Commission Order No. 2009-104(A)**

**Quarter Ending June 30, 2015**

**Appendix 1** lists and updates each of the milestones which the Commission adopted as the Approved Construction Schedule for the Units, pursuant to S.C. Code Ann. § 58-33-270(B)(1) in Order No. 2012-884. **Appendix 1** provides columns with the following information:

1. Milestone tracking ID number.
2. The description of the milestone as updated in Order No. 2012-884.
3. The BLRA milestone date as approved by the Commission in Order No. 2012-884.
4. The current milestone date.
5. For each completed milestone, the date by which it was completed. For milestones completed prior to the current reporting quarter, the milestone entry is shaded in gray. For milestones completed during the current reporting quarter, the milestone entry is shaded in green.
6. Information showing the number of months, if any, by which a milestone has been shifted. For milestones with planned completion dates that vary in days instead of months, the milestone entry is shaded in yellow.
7. Information as to whether any milestone has been shifted outside of the +18/-24 Month Contingency approved by the Commission.
8. Notes.

On the final page of the document, there is a chart summarizing milestone completion and movement comparing the current milestone date to the milestone date approved in Order No. 2012-884. This movement is shown for only the milestones that have not been completed.

# Appendix 1 VC Summer Units 2 and 3

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	15-2Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
1	Approve Engineering Procurement and Construction Agreement Issue POs to nuclear component fabricators for Units 2 & 3	Complete		5/23/2008		No	
2	Containment Vessels	Complete		12/3/2008		No	
3	Contractor Issue PO to Passive Residual Heat Removal Heat Exchanger Fabricator - First Payment - Unit 2	Complete		8/18/2008		No	
4	Contractor Issue PO to Accumulator Tank Fabricator - Unit 2	Complete		7/31/2008		No	
5	Contractor Issue PO to Core Makeup Tank Fabricator - Units 2 & 3	Complete		9/30/2008		No	
6	Contractor Issue PO to Squib Valve Fabricator - Units 2 & 3	Complete		3/31/2009		No	
7	Contractor Issue PO to Steam Generator Fabricator - Units 2 & 3	Complete		5/29/2008		No	
8	Contractor Issue Long Lead Material PO to Reactor Coolant Pump Fabricator - Units 2 & 3	Complete		6/30/2008		No	
9	Contractor Issue PO to Pressurizer Fabricator - Units 2 & 3	Complete		8/18/2008		No	
10	Contractor Issue PO to Reactor Coolant Loop Pipe Fabricator - First Payment - Units 2 & 3	Complete		6/20/2008		No	
11	Reactor Vessel Internals - Issue Long Lead Material PO to Fabricator - Units 2 & 3	Complete		11/21/2008		No	
12	Contractor Issue Long Lead Material PO to Reactor Vessel Fabricator - Units 2 & 3	Complete		5/29/2008		No	
13	Contractor Issue PO to Integrated Head Package Fabricator - Units 2 & 3	Complete		7/31/2009		No	
14	Control Rod Drive Mechanism Issue PO for Long Lead Material to Fabricator - Units 2 & 3 - first payment	Complete		6/21/2008		No	
15	Issue POs to nuclear component fabricators for Nuclear Island structural CA20 Modules	Complete		8/28/2009		No	
16	Start Site Specific and balance of plant detailed design	Complete		9/11/2007		No	
17	Instrumentation & Control Simulator - Contractor Place Notice to Proceed - Units 2 & 3	Complete		10/31/2008		No	

South Carolina Electric & Gas Company

Legend



= Completed



= Completed this Quarter



= Movement in Days Only



# Appendix 1 VC Summer Units 2 and 3

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	15-2Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
18	Steam Generator - Issue Final PO to Fabricator for Units 2 & 3	Complete		6/30/2008		No	
19	Reactor Vessel Internals - Contractor Issue PO for Long Lead Material (Heavy Plate and Heavy Forgings) to Fabricator - Units 2 & 3	Complete		1/29/2010		No	
20	Contractor Issue Final PO to Reactor Vessel Fabricator - Units 2 & 3	Complete		9/30/2008		No	
21	Variable Frequency Drive Fabricator Issue Transformer PO - Units 2 & 3	Complete		4/30/2009		No	
22	Start clearing, grubbing and grading	Complete		1/26/2009		No	
23	Core Makeup Tank Fabricator Issue Long Lead Material PO - Units 2 & 3	Complete		10/31/2008		No	
24	Accumulator Tank Fabricator Issue Long Lead Material PO - Units 2 & 3	Complete		10/31/2008		No	
25	Pressurizer Fabricator Issue Long Lead Material PO - Units 2 & 3	Complete		10/31/2008		No	
26	Reactor Coolant Loop Pipe - Contractor Issue PO to Fabricator - Second Payment - Units 2 & 3	Complete		4/30/2009		No	
27	Integrated Head Package - Issue PO to Fabricator - Units 2 and 3 - second payment	Complete		7/31/2009		No	
28	Control Rod Drive Mechanisms - Contractor Issue PO for Long Lead Material to Fabricator - Units 2 & 3	Complete		6/30/2008		No	
29	Contractor Issue PO to Passive Residual Heat Removal Heat Exchanger Fabricator - Second Payment - Units 2 & 3	Complete		10/31/2008		No	
30	Start Parr Road intersection work	Complete		2/13/2009		No	
31	Reactor Coolant Pump - Issue Final PO to Fabricator - Units 2 & 3	Complete		6/30/2008		No	
32	Integrated Heat Packages Fabricator Issue Long Lead Material PO - Units 2 & 3	Complete		10/1/2009		No	
33	Design Finalization Payment 3	Complete		1/30/2009		No	
34	Start site development	Complete		6/23/2008		No	

South Carolina Electric & Gas Company

Legend

☐ = Completed

☐ = Completed this Quarter

☐ = Movement in Days Only

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# Appendix 1

## VC Summer Units 2 and 3

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	15-2Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
35	Contractor Issue PO to Turbine Generator Fabricator - Units 2 & 3	Complete		2/19/2009		No	
36	Contractor Issue PO to Main Transformers Fabricator - Units 2 & 3	Complete		9/25/2009		No	
37	Core Makeup Tank Fabricator Notice to Contractor Receipt of Long Lead Material - Units 2 & 3	Complete		12/30/2010		No	
38	Design Finalization Payment 4	Complete		4/30/2009		No	
39	Turbine Generator Fabricator Issue PO for Condenser Material - Unit 2	Complete		8/28/2009		No	
40	Reactor Coolant Pump Fabricator Issue Long Lead Material Lot 2 - Units 2 & 3	Complete		4/30/2009		No	
41	Passive Residual Heat Removal Heat Exchanger Fabricator Receipt of Long Lead Material - Units 2 & 3	Complete		5/27/2010		No	
42	Design Finalization Payment 5	Complete		7/31/2009		No	
43	Start erection of construction buildings, to include craft facilities for personnel, tools, equipment; first aid facilities; field offices for site management and support personnel; temporary warehouses; and construction hiring office	Complete		12/18/2009		No	
44	Reactor Vessel Fabricator Notice to Contractor of Receipt of Flange Nozzle Shell Forging - Unit 2	Complete		8/28/2009		No	
45	Design Finalization Payment 6	Complete		10/7/2009		No	
46	Instrumentation and Control Simulator - Contractor Issue PO to Subcontractor for Radiation Monitor System - Units 2 & 3	Complete		12/17/2009		No	
47	Reactor Vessel Internals - Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2	Complete		7/29/2011		No	
48	Turbine Generator Fabricator Issue PO for Moisture Separator Reheater/Feedwater Heater Material - Unit 2	Complete		4/30/2010		No	
49	Reactor Coolant Loop Pipe Fabricator Acceptance of Raw Material - Unit 2	Complete		2/18/2010		No	

Legend  = Completed  = Completed this Quarter  = Movement in Days Only



# Appendix 1 VC Summer Units 2 and 3

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	15-2Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18-24 Months Contingency?	Notes
50	Reactor Vessel Internals - Fabricator Start Weld Neutron Shield Spacer Pads to Assembly - Unit 2	Complete		8/28/2012		No	
51	Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 2	Complete		6/30/2009		No	
52	Contractor Notified that Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 2	Complete		12/23/2010		No	
53	Start excavation and foundation work for the standard plant for Unit 2	Complete		3/15/2010		No	
54	Steam Generator Fabricator Notice to Contractor of Receipt of 2nd Steam Generator Tubesheet Forging - Unit 2	Complete		4/30/2010		No	
55	Reactor Vessel Fabricator Notice to Contractor of Outlet Nozzle Welding to Flange Nozzle Shell Completion - Unit 2	Complete		12/30/2010		No	
56	Turbine Generator Fabricator Notice to Contractor Condenser Fabrication Started - Unit 2	Complete		5/17/2010		No	
57	Complete preparations for receiving the first module on site for Unit 2	Complete		1/22/2010		No	
58	Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Transition Cone Forging - Unit 2	Complete		4/21/2010		No	
59	Reactor Coolant Pump Fabricator Notice to Contractor of Manufacturing of Casing Completion - Unit 2	Complete		11/16/2010		No	
60	Reactor Coolant Loop Pipe Fabricator Notice to Contractor of Machining, Heat Treating & Non-Destructive Testing Completion - Unit 2	Complete		3/20/2012		No	
61	Core Makeup Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 2	Complete		11/26/2012		No	
62	Polar Crane Fabricator Issue PO for Main Hoist Drum and Wire Rope - Units 2 & 3	Complete		2/1/2011		No	
63	Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 3	Complete		6/14/2011		No	

Legend  = Completed  = Completed this Quarter  = Movement in Days Only



# Appendix 1

## VC Summer Units 2 and 3

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	15-2Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
64	Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 2	Complete		3/26/2012		No	
65	Start placement of mud mat for Unit 2	Complete		7/20/2012		No	
66	Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Tubing - Unit 2	Complete		9/28/2010		No	
67	Pressurizer Fabricator Notice to Contractor of Welding of Upper and Intermediate Shells Completion - Unit 2	Complete		10/28/2011		No	
68	Reactor Vessel Fabricator Notice to Contractor of Closure Head Cladding Completion - Unit 3	Complete		6/28/2012		No	
69	Begin Unit 2 first nuclear concrete placement	Complete		3/9/2013		No	
70	Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 2	Complete		12/1/2011		No	
71	Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2	Complete		7/29/2011		No	
72	Steam Generator Fabricator Notice to Contractor of Completion of 1st Steam Generator Tubing Installation - Unit 2	Complete		1/27/2012		No	
73	Reactor Coolant Loop Pipe - Shipment of Equipment to Site - Unit 2	Complete		12/19/2013		No	
74	Control Rod Drive Mechanism - Ship Remainder of Equipment (Latch Assembly & Rod Travel Housing) to Head Supplier - Unit 2	Complete		7/16/2012		No	
75	Pressurizer Fabricator Notice to Contractor of Welding of Lower Shell to Bottom Head Completion - Unit 2	Complete		12/22/2011		No	
76	Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 2	Complete		5/4/2012		No	
77	Design Finalization Payment 14	Complete		10/31/2011		No	
78	Set module CA04 for Unit 2	Complete		5/3/2014		No	

Legend  = Completed  = Completed this Quarter = Movement in Days Only



**Appendix 1**  
**VC Summer Units 2 and 3**

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	15-2Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
79	Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Final Post Weld Heat Treatment - Unit 2	Complete		5/24/2011		No	
80	Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Completion of Tubing - Unit 2	Complete		5/29/2012		No	
81	Polar Crane Fabricator Notice to Contractor of Girder Fabrication Completion - Unit 2	Complete		10/23/2012		No	
82	Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 3	Complete		8/26/2013		No	
83	Set Containment Vessel ring #1 for Unit 2	Complete		6/3/2014		No	
84	Reactor Coolant Pump Fabricator Delivery of Casings to Port of Export - Unit 2	Complete		7/6/2013		No	
85	Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 3	Complete		7/18/2013		No	
86	Reactor Vessel Fabricator Notice to Contractor of Receipt of Core Shell Forging - Unit 3	Complete		3/29/2012		No	
87	Contractor Notified that Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 3	Complete		11/9/2011		No	
88	Set Nuclear Island structural module CA03 for Unit 2	6/26/2013	5/21/2016			Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
89	Squib Valve Fabricator Notice to Contractor of Completion of Assembly and Test for Squib Valve Hardware - Unit 2	Complete		5/10/2012		No	
90	Accumulator Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3	Complete		9/16/2013		No	
91	Polar Crane Fabricator Notice to Contractor of Electric Panel Assembly Completion - Unit 2	Complete		3/6/2013		No	
92	Start containment large bore pipe supports for Unit 2	Complete		11/13/2014		No	
93	Integrated Head Package - Shipment of Equipment to Site - Unit 2	Complete		5/9/2014		No	

Legend  = Completed  = Completed this Quarter  = Movement in Days Only



**Appendix 1**  
**VC Summer Units 2 and 3**

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	15-2Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
94	Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 2	Complete		12/17/2013		No	
95	Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 3	Complete		2/7/2014		No	
96	Steam Generator Fabricator Notice to Contractor of Satisfactory Completion of 1st Steam Generator Hydrotest - Unit 2	Complete		1/14/2013		No	
97	Start concrete fill of Nuclear Island structural modules CA01 and CA02 for Unit 2	4/3/2014	12/6/2016		+32 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
98	Passive Residual Heat Removal Heat Exchanger - Delivery of Equipment to Port of Entry - Unit 2	Complete		4/25/2014		No	
99	Refueling Machine Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 2	Complete		1/8/2015		No	
100	Deliver Reactor Vessel Internals to Port of Export - Unit 2	1/31/2014	9/23/2015		+20 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
101	Set Unit 2 Containment Vessel #3	4/24/2014	9/29/2016		+29 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
102	Steam Generator - Contractor Acceptance of Equipment at Port of Entry - Unit 2	Complete		1/16/2015		No	
103	Turbine Generator Fabricator Notice to Contractor Turbine Generator Ready to Ship - Unit 2	Complete		5/28/2013		No	
104	Pressurizer Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3	Complete		3/18/2015		No	
105	Polar Crane - Shipment of Equipment to Site - Unit 2	1/31/2014	8/31/2015		+19 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.

South Carolina Electric & Gas Company

Legend



= Completed



= Completed this Quarter



= Movement in Days Only



**Appendix 1**  
**VC Summer Units 2 and 3**

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	15-2Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
106	Receive Unit 2 Reactor Vessel on site from fabricator	Complete		7/31/2013		No	
107	Set Unit 2 Reactor Vessel	6/23/2014	11/15/2016		+29 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
108	Steam Generator Fabricator Notice to Contractor of Completion of 2nd Channel Head to Tubesheet Assembly Welding - Unit 3	Complete		4/24/2015		No	
109	Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 3	8/31/2014	10/30/2015		+14 Month(s)	No	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
110	Reactor Coolant Pump - Shipment of Equipment to Site (2 Reactor Coolant Pumps) - Unit 2	10/31/2013	5/30/2016		+31 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
111	Place first nuclear concrete for Unit 3	Complete		11/2/2013		No	
112	Set Unit 2 Steam Generator	10/23/2014	1/9/2017		+27 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
113	Main Transformers Ready to Ship - Unit 2	Complete		7/31/2013		No	
114	Complete Unit 3 Steam Generator Hydrotest at fabricator	2/28/2014	7/30/2015		+17 Month(s)	No	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
115	Set Unit 2 Containment Vessel Bottom Head on basemat legs	Complete		5/22/2013		No	
116	Set Unit 2 Pressurizer Vessel	5/16/2014	2/6/2017		+33 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
117	Reactor Coolant Pump Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 3	2/28/2015	1/31/2017		+23 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.

Legend  = Completed  = Completed this Quarter  = Movement in Days Only

# Appendix 1 VC Summer Units 2 and 3

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	15-2Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
118	Deliver Reactor Vessel Internals to Port of Export - Unit 3	6/30/2015	5/19/2017		+23 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
119	Main Transformers Fabricator Issue PO for Material - Unit 3	Complete		1/15/2015		No	
120	Complete welding of Unit 2 Passive Residual Heat Removal System piping	2/5/2015	3/6/2017		+25 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
121	Steam Generator - Contractor Acceptance of Equipment at Port of Entry - Unit 3	4/30/2015	3/28/2016		+11 Month(s)	No	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
122	Refueling Machine - Shipment of Equipment to Site - Unit 3	2/28/2015	4/5/2016		+14 Month(s)	No	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
123	Set Unit 2 Polar Crane	1/9/2015	5/12/2017		+28 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
124	Reactor Coolant Pumps - Shipment of Equipment to Site - Unit 3	6/30/2015	4/28/2017		+22 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
125	Main Transformers Ready to Ship - Unit 3	7/31/2015	9/21/2015		+2 Month(s)	No	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
126	Spent Fuel Storage Rack - Shipment of Last Rack Module - Unit 3	7/31/2014	8/24/2015		+13 Month(s)	No	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
127	Start electrical cable pulling in Unit 2 Auxiliary Building	8/14/2013	2/7/2017		+42 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.

## Legend



= Completed



= Completed this Quarter



= Movement in Days Only

Appendix 1  
VC Summer Units 2 and 3

15-2Q

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	15-2Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
128	Complete Unit 2 Reactor Coolant System cold hydro	1/22/2016	5/25/2018		+28 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
129	Activate class 1E DC power in Unit 2 Auxiliary Building	3/15/2015	8/16/2017		+29 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
130	Complete Unit 2 hot functional test	5/3/2016	8/25/2018		+27 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
131	Install Unit 3 ring 3 for containment vessel	8/25/2015	2/15/2017		+18 Month(s)	No	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
132	Load Unit 2 nuclear fuel	9/15/2016	4/6/2019		+31 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
133	Unit 2 Substantial Completion	3/15/2017	9/28/2019		+30 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
134	Set Unit 3 Reactor Vessel	10/22/2015	5/26/2017		+19 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
135	Set Unit 3 Steam Generator #2	2/25/2016	9/22/2017		+19 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
136	Set Unit 3 Pressurizer Vessel	7/16/2015	11/27/2017		+28 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
137	Complete welding of Unit 3 Passive Residual Heat Removal System piping	6/16/2016	1/23/2018		+19 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.

Legend  = Completed  = Completed this Quarter  = Movement in Days Only

South Carolina Electric &amp; Gas Company



**Appendix 1**  
**VC Summer Units 2 and 3**

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	15-2Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
138	Set Unit 3 polar crane	5/9/2016	12/18/2017		+19 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
139	Start Unit 3 Shield Building roof slab rebar placement	5/26/2016	6/29/2018		+25 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
140	Start Unit 3 Auxiliary Building electrical cable pulling	11/7/2014	6/16/2017		+31 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
141	Activate Unit 3 Auxiliary Building class 1E DC power	5/15/2016	5/19/2018		+24 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
142	Complete Unit 3 Reactor Coolant System cold hydro	3/22/2017	2/26/2019		+23 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
143	Complete Unit 3 hot functional test	7/3/2017	5/26/2019		+22 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
144	Complete Unit 3 nuclear fuel load	11/15/2017	12/10/2019		+25 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
145	Begin Unit 3 full power operation	4/8/2018	5/11/2020		+25 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
146	Unit 3 Substantial Completion	5/15/2018	6/7/2020		+25 Month(s)	Yes	SCE&G has proposed adjustment of milestones in Docket 2015-103-E.
<p align="center"><b>SUMMARY</b></p> <p align="center">Total Milestones Completed      106      out of      146 =      73%</p> <p align="center">Milestone Movement - Order No. 2012-884 vs. 15-2Q:</p>							

Legend       = Completed       = Completed this Quarter       = Movement in Days Only

Appendix 1  
VC Summer Units 2 and 3

15-2Q

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	15-2Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
a) Forward Movement 40 out of 146 = 27% b) Backward Movement 0 out of 146 = 0% Milestones Within +12 to +18 Month range 7 out of 146 = 4% Milestones over the +18 Month range 33 out of 146 = 23%							

Legend

 = Completed
  = Completed this Quarter
  = Movement in Days Only

**APPENDIX 2****V. C. Summer Nuclear Station Units 2 & 3**

**Quarterly Report to the South Carolina Office of Regulatory Staff  
Submitted by South Carolina Electric & Gas Company  
Pursuant to Public Service Commission Order No. 2009-104(A)**

**Quarter Ending June 30, 2015**

**Appendix 2** is an updated and expanded version of the information contained in the capital cost schedule approved by the Commission in Order No. 2012-884.

**Appendix 2** shows:

1. The actual expenditures on the project by plant cost category through the current period.
2. The changes in capital costs reflecting the Company's current forecast of expenditures on the project for each future period by plant cost category. In updating its cost projections the Company has used the current construction schedule for the project and the Commission-approved inflation indices as set forth in **Appendix 4** to this report.
3. The cumulative CWIP for the project and the balance of CWIP that is not yet reflected in revised rates.
4. The current rate for calculating AFUDC computed as required under applicable FERC regulations.

The Cumulative Project Cash Flow target as approved in Order No. 2012-884 and as updated for escalation and other Commission-approved adjustments is found under the heading "**Per Order 2012-884 Adjusted.**" The adjustments reflect:

1. Changes in inflation indices.
2. Budget Carry-Forward Adjustments used, where appropriate to track the effect of lower-than-expected cumulative costs on the future cumulative cash flow of the project.

**Appendix 2** also shows the cumulative cash flow for the project based on actual expenditures to date and the current construction schedule and forecast of year-by-year costs going forward. This information is found under the heading "**Actual through June 2015 plus Projected.**"

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## Appendix 2

PUBLIC VERSION

## RESTATEd and UPDATED CONSTRUCTION EXPENDITURES

(Thousands of \$)

## V.C. Summer Units 2 and 3 - Summary of SCE&amp;G Capital Cost Components

Per Order 2012-884 Adjusted	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Total</b>														
Annual Project Cash Flow(per order)	21,723	100,905	340,003	398,551	349,061	713,307	950,179	1,007,569	831,281	521,351	201,408	81,510	-	-
Capital Cost Rescheduling Contingency	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Budget Carry-Forward Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net	21,723	100,905	340,003	398,551	349,061	713,307	950,179	1,007,569	831,281	521,351	201,408	81,510	-	-
Adjusted for Change in Escalation	21,723	100,905	340,003	398,551	349,061	704,909	935,236	974,900	807,547	500,092	198,320	80,543	-	-
Cumulative Project Cash Flow(Target)	21,723	122,629	462,632	861,183	1,210,244	1,915,153	2,850,390	3,825,289	4,632,836	5,132,928	5,331,248	5,411,791	5,411,791	5,411,791

## Actual through June 2015\* plus Projected

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Total</b>														
Plant Cost Categories														
Fixed with No Adjustment	-	26	724	927	11,964	51,677	56,593	46,439	60,986	64,563	34,603	1,010	-	-
Firm with Fixed Adjustment A	21,723	97,386	319,073	374,810	314,977	488,461	448,947	418,039	587,449	790,929	709,016	418,473	202,757	53,995
Firm with Indexed Adjustment B	-	3,519	20,930	23,741	34,084	74,485	88,622	93,326	164,506	241,447	249,524	167,054	114,498	46,454
Actual Craft Wages														
Non-Labor Costs														
Time & Materials														
Owners Costs														
Transmission Costs														
Total Base Project Costs(2007 \$)	329,512													
Total Project Escalation	5,246,638													
Total Project Escalation	1,322,189													
<b>Total Revised Project Cash Flow</b>	<b>6,568,827</b>	<b>21,723</b>	<b>100,905</b>	<b>398,551</b>	<b>349,061</b>	<b>562,946</b>	<b>537,569</b>	<b>511,965</b>	<b>751,955</b>	<b>1,032,376</b>	<b>958,541</b>	<b>585,527</b>	<b>317,255</b>	<b>100,449</b>
Cumulative Project Cash Flow(Revised)	21,723	122,629	462,632	861,183	1,210,244	1,773,190	2,310,759	2,822,724	3,574,679	4,607,055	5,565,596	6,151,123	6,468,378	6,568,827
AFUDC(Capitalized Interest)	285,477	645	3,497	10,564	17,150	14,218	27,722	26,131	23,849	45,040	44,964	32,345	15,770	4,642
Gross Construction	6,854,304	22,368	104,403	350,567	415,701	363,278	581,886	565,291	775,805	1,077,416	1,003,505	617,872	333,025	105,091
Construction Work in Progress	22,368	126,771	477,338	893,039	1,256,317	1,838,203	2,403,495	2,941,590	3,717,395	4,794,811	5,798,316	6,416,188	6,749,213	6,854,304
GWIP Currentity in Rates				<b>2,666,843</b>										
<b>June 30, 2015 Actual Incremental CWIP Not Currentity in Rates</b>				<b>662,170</b>										

\*Applicable index escalation rates for 2015 are estimated. Escalation is subject to restatement when actual indices for 2015 are final.

Notes:

2015-2020 AFUDC rate applied

5.65%

The AFUDC rate applied is the current SCE&amp;G rate. AFUDC rates can vary with changes in market interest rates, SCE&amp;G's embedded cost of capital, capitalization ratios, construction work in process, and SCE&amp;G's short-term debt outstanding.

**APPENDIX 3****V. C. Summer Nuclear Station Units 2 & 3**

**Quarterly Report to the South Carolina Office of Regulatory Staff  
Submitted by South Carolina Electric & Gas Company  
Pursuant to Public Service Commission Order No. 2009-104(A)**

**Quarter Ending June 30, 2015**

For comparison purposes, **Appendix 3** provides the schedule of capital costs for the project which was approved by the Commission in Order No. 2012-884 as the Approved Capital Cost of the Units, pursuant to S.C. Code Ann. § 58-33-270(B)(2). **Appendix 3** also reflects the forecast of AFUDC expense based on these adjusted schedules and the AFUDC rates that were current at the time of Order No. 2012-884. **Appendix 3** is intended to provide a fixed point of reference for future revisions and updating. While the schedule of costs contained on **Appendix 3** is subject to revision for escalation, changes in AFUDC rates and amounts, capital cost scheduling contingencies and other contingency adjustments as authorized in Order No. 2009-104(A), no such adjustments have been made to the schedules presented here.



## Appendix 3

PUBLIC VERSION

RESTATED and UPDATED CONSTRUCTION EXPENDITURES

(Thousands of \$)

## V.C. Summer Units 2 and 3 - Summary of SCE&amp;G Capital Cost Components

Per Order 2012-884

Plant Cost Categories	Actual					Projected							
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Total													
CONFIDENTIAL													
Fixed with No Adjustment	-	26	724	927	11,964	57,206	56,903	57,508	77,990	64,727	1,537	-	
Firm with Fixed Adjustment A	21,723	97,386	319,073	374,810	314,977	613,678	780,753	792,394	647,295	386,537	142,999	56,781	
Firm with Fixed Adjustment B	-	3,519	20,930	23,741	34,084	99,630	169,425	215,175	183,987	134,815	58,409	24,729	
Firm with Indexed Adjustment													
Actual Craft Wages													
Non-Labor Costs													
Time & Materials													
Owners Costs													
Transmission Costs													
Total Base Project Costs(2007 \$)	329,512												
Total Project Escalation	4,548,405												
Total Revised Project Cash Flow	968,444												
Cumulative Project Cash Flow(Revised)	21,723	100,905	340,003	388,551	349,061	713,307	950,179	1,007,569	831,281	521,351	201,408	81,510	
AFUDC(Capitalized Interest)	21,723	122,629	462,632	861,183	1,210,244	1,923,551	2,873,730	3,881,299	4,712,580	5,233,931	5,435,339	5,516,849	
Construction Work in Progress	645	3,497	10,564	17,150	14,218	20,449	38,384	42,868	40,888	27,518	15,391	6,144	
	22,368	126,771	477,338	893,039	1,256,317	1,990,074	2,978,637	4,029,074	4,901,243	5,450,113	5,686,911	5,754,565	

**APPENDIX 4****V. C. Summer Nuclear Station Units 2 & 3**

**Quarterly Report to the South Carolina Office of Regulatory Staff  
Submitted by South Carolina Electric & Gas Company  
Pursuant to Public Service Commission Order No. 2009-104(A)**

**Quarter Ending June 30, 2015**

**Appendix 4** shows the changes in the inflation indices approved in Order No. 2009-104(A). Included is a ten year history of the Handy-Whitman All Steam Index, South Atlantic Region; the Handy-Whitman All Steam and Nuclear Index, South Atlantic Region; the Handy-Whitman All Transmission Plant Index, South Atlantic Region; and the Chained GDP Index. The change in the relevant indices from the Combined Application is also provided.

# Appendix 4, Chart A

## Inflation Indices, Chart A

HW All Steam Generation Plant Index, January 2015

<u>Year</u>	<u>Index</u>	<u>Yr/Yr change</u>	<u>Three Year Average</u>	<u>Five Year Average</u>	<u>Ten Year Average</u>
2015	619	3.17%	2.28%	2.94%	4.08%
2014	600	-1.15%	2.73%	2.05%	4.62%
2013	607	4.84%	4.24%	3.25%	4.95%
2012	579	4.51%	2.19%	3.91%	4.71%
2011	554	3.36%	2.30%	4.73%	
2010	536	-1.29%	3.89%	5.21%	
2009	543	4.83%	7.19%	7.19%	
2008	518	8.14%	7.50%	6.65%	
2007	479	8.62%	7.66%	5.51%	
2006	441	5.76%	5.49%	4.17%	
2005	417	8.59%	4.39%		
2004	384	2.13%	2.17%		
2003	376	2.45%			
2002	367	1.94%			
2001	360				

<b>BLRA</b>	<b>Order 2010-12</b>	<b>Order 2011-345</b>	<b>Order 2012-884</b>	<b>Update</b>
<b>Filing</b>	<b>Jan-09</b>	<b>Jul-10</b>	<b>Jan-12</b>	<b>Jan-15</b>
<b>Jul-07</b>				
<b>7.68%</b>	<b>4.83%</b>	<b>4.79%</b>	<b>4.51%</b>	<b>3.17%</b>
<b>5.74%</b>	<b>7.19%</b>	<b>5.31%</b>	<b>3.91%</b>	<b>2.94%</b>

### HW All Steam Index:

One year  
Five Year

## Appendix 4, Chart B

### Inflation Indices, Chart B

HW All Steam and Nuclear Generation Plant Index, January 2015

<u>Year</u>	<u>Index</u>	<u>Yr/Yr change</u>	<u>Three Year Average</u>	<u>Five Year Average</u>	<u>Ten Year Average</u>
2015	619	3.17%	2.35%	2.95%	4.10%
2014	600	-1.32%	2.80%	2.09%	4.65%
2013	608	5.19%	4.29%	3.32%	4.99%
2012	578	4.52%	2.20%	3.87%	4.72%
2011	553	3.17%	2.30%	4.74%	
2010	536	-1.11%	3.89%	5.26%	
2009	542	4.84%	7.21%	7.20%	
2008	517	7.93%	7.52%	6.66%	
2007	479	8.86%	7.75%	5.57%	
2006	440	5.77%	5.51%	4.19%	
2005	416	8.62%	4.40%		
2004	383	2.13%	2.18%		
2003	375	2.46%			
2002	366	1.95%			
2001	359				

<b>BLRA</b>
<b>Filing</b>
<b>Jul-07</b>
<b>7.69%</b>
<b>5.75%</b>

<b>Order 2010-12</b>	<b>Order 2011-345</b>	<b>Order 2012-884</b>	<b>Update</b>
<b>Jan-09</b>	<b>Jul-10</b>	<b>Jan-12</b>	<b>Jan-15</b>
<b>4.84%</b>	<b>4.60%</b>	<b>4.52%</b>	<b>3.17%</b>
<b>7.20%</b>	<b>5.32%</b>	<b>3.87%</b>	<b>2.95%</b>

#### HW All Steam/Nuclear Index:

One year  
Five Year

## Appendix 4, Chart C

### Inflation Indices, Chart C

HW All Transmission Plant Index, January 2015

<u>Year</u>	<u>Index</u>	<u>Yr/Yr change</u>	<u>Three Year Average</u>	<u>Five Year Average</u>	<u>Ten Year Average</u>
2015	610	2.52%	1.82%	1.88%	3.81%
2014	595	-0.34%	1.81%	0.55%	4.57%
2013	597	3.29%	2.40%	2.10%	4.90%
2012	578	2.48%	-0.07%	3.00%	4.55%
2011	564	1.44%	1.57%	4.33%	
2010	556	-4.14%	3.68%	5.74%	
2009	580	7.41%	8.11%	8.60%	
2008	540	7.78%	8.48%	7.71%	
2007	501	9.15%	9.27%	6.10%	
2006	459	8.51%	7.21%	4.76%	
2005	423	10.16%	4.28%		
2004	384	2.95%	1.72%		
2003	373	-0.27%			
2002	374	2.47%			
2001	365				

  

<b>BLRA</b>	<b>Order 2010-12</b>	<b>Order 2011-345</b>	<b>Order 2012-884</b>	<b>Update</b>
<b>Filing</b>	<b>Jan-09</b>	<b>Jul-10</b>	<b>Jan-12</b>	<b>Jan-15</b>
<b>Jul-07</b>				
<b>8.82%</b>	<b>7.41%</b>	<b>5.08%</b>	<b>2.48%</b>	<b>2.52%</b>
<b>6.86%</b>	<b>8.60%</b>	<b>5.23%</b>	<b>3.00%</b>	<b>1.88%</b>

**HW All Transmission Plant Index**

One year  
Five Year

## Appendix 4

## Inflation Indices, Chart D

GDP Chained Price Index, 2014

SERIESTYPE	UNIT	SHORT LABEL	ID	2009	2010	2011	2012	2013	2014
<b>Chained Price Index--Gross Domestic Product</b>									
(2009=100) Chained price index-gross domestic product , Source: BEA , Units: Index- 2009=100.0									
U.S. Macro - 10 Year Baseline			45158933	100.00	101.23	103.32	105.17	106.74	108.32
Annual Percent change					1.23%	2.06%	1.79%	1.49%	1.48%
3-Year Annual Percent change							1.70%	1.78%	1.59%
5-Year Annual Percent change									1.61%
<b>Consumer Price Index, All-Urban</b>									
Index									
Consumer price index, all-urban , Source: BLS , Units: - 1982-84=1.00									
U.S. Macro - 10 Year Baseline			45158182	2.15	2.18	2.25	2.30	2.33	2.37
Percent change					1.40%	3.21%	2.22%	1.30%	1.72%
3-Year Annual Percent change							2.28%	2.25%	1.75%
5-Year Annual Percent change									1.97%
<b>Producer Price Index--Finished Goods</b>									
(1982=1.0) Producer price index-finished goods , Source: BLS , Units: Index- 1982=1.0									
U.S. Macro - 10 Year Baseline			45159751	1.73	1.80	1.91	1.94	1.97	2.00
Percent change					4.05%	6.11%	1.57%	1.55%	1.52%
3-Year Annual Percent change							3.91%	3.08%	1.55%
5-Year Annual Percent change									2.96%

BLRA
Filing
Jul-07
2.66%
2.81%

## GDP Chained Price Index

One year  
Five Year

Order 2010-12	Order 2011-345	Order 2012-884	Update
Jan-09	Jul-10	Jan-12	Jan-15
2.24%	0.43%	2.11%	1.48%
2.86%	1.97%	1.69%	1.61%

**APPENDIX 5****V. C. Summer Nuclear Station Units 2 & 3**

**Quarterly Report to the South Carolina Office of Regulatory Staff  
Submitted by South Carolina Electric & Gas Company  
Pursuant to Public Service Commission Order No. 2009-104(A)**

**Quarter Ending June 30, 2015**

**Appendix 5** indicates those LARs that have been submitted by SCE&G to the NRC for review. Included is the title of each LAR, a brief description of the change(s) associated with the LAR, the date the LAR was submitted to the NRC, and the status of the requests.

**Appendix 5**  
**V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

PUBLIC VERSION

<b>Topic</b>	<b>Description of Change</b>	<b>Submittal Date</b>	<b>Status</b>
LAR 12-01 - Additional Electrical Penetration Assemblies	Provide additional penetrations of the Containment Vessel to allow sufficient space for electrical and instrument cables.	8/29/2012	Approved on 7/1/2013
LAR-12-02 – Tier 1 Table 3.3-1 Discrepancies – PAR Utilized	Conform the current ITAAC standards used to verify the shield building wall thickness to align with those approved in DCD Rev. 19.	9/26/2012	Approved on 5/30/2013
LAR 13-01 - Basemat Shear Reinforcement Design Spacing Requirements - PAR Utilized	Clarify the provisions for maximum spacing of the shear reinforcement in the basemat below the auxiliary building to be consistent with requirements shown in existing FSAR figures.	1/15/2013	Approved on 2/26/2013
LAR 13-02 - Basemat Shear Reinforcement Design Details - PAR Utilized	Revises the requirements for development of basemat shear reinforcement in the licensing basis from ACI 349 Appendix B to ACI 318-11, Section 12.6. The use of ACI 318 criteria for headed reinforcement results in longer shear ties and thicker concrete in areas below the elevator pits and a sump in the nuclear island basemat.	1/18/2013	Approved on 3/1/2013
LAR 13-03 - Turbine Building Eccentric and Concentric Bracing	Revises the turbine building main area to use a mixed bracing system using eccentrically and concentrically braced frames as a means of preventing the turbine building from collapsing onto the Nuclear Island (NI) during a seismic event. The structural design code is also changed to a code that includes adequate provisions for the new bracing system.	2/7/2013	Approved on 7/1/2013
LAR 13-04 - Reconciliation of Tier 1 Valve Differences	Reconciles valve related information contained in Tier 1 material to be consistent with corresponding Tier 2 material currently incorporated in the UFSAR.	2/7/2013	Under NRC Review

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*



**Appendix 5**  
**V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

PUBLIC VERSION

<b>Topic</b>	<b>Description of Change</b>	<b>Submittal Date</b>	<b>Status</b>
LAR 13-05 - Structural Modules Shear Stud Size and Spacing	Revises Note 2 of UFSAR Figure 3.8.3-8, Sheet 1, which presents typical structural wall module details. This information needs to be changed to be consistent with the design basis calculations.	2/14/2013	Approved on 5/23/2013
LAR 13-06 - Primary Sampling System Changes	Alters the design of the Primary Sampling System (PSS) by replacing a check valve with a solenoid-operated gate valve, modifying the PSS inside-containment header and adding a PSS containment penetration.	2/7/2013	Approved on 8/22/2013
LAR 13-07 - Changes to the Chemical and Volume Control System (CVS)	Alters the design of the Chemical and Volume Control System (CVS) by adding/changing valves, separating the zinc and hydrogen injection paths and relocating the zinc injection point.	3/13/2013	Approved on 2/24/2014
LAR 13-08 - Module Obstructions and Details	Withdrawn after review with NRC-see Letter NND-13-202. <i>Superseded by LAR 13-20.</i>	2/28/2013	Withdrawn
LAR 13-09 - Annex/Radwaste Building Layout Changes	Updates column line numbers on Annex Building Figures and changes the configuration of the Radwaste building by adding three bunkers for storage and merging two rooms.	2/27/2014	Under NRC Review
LAR 13-10 - Human Factors Engineering Integrated System Validation Plan	Revises referenced document APP-OCS-GEH-320 from Revision D to Revision 2.	3/13/2013	Approved on 7/31/2014
LAR 13-11 - NI Wall Reinforcement Criteria -PAR Utilized	Revises structural code criteria for anchoring reinforcement bar within the NI walls (adopts ACI-318 for this purpose).	3/26/2013	Approved on 6/6/2013

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*

## Appendix 5

### V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

PUBLIC VERSION

Topic	Description of Change	Submittal Date	Status
LAR 13-12 - Fire Area Boundary Changes	Revises various information to support fire area boundaries (HVAC information, stairwell changes, and other layout changes).	7/17/2013	Approved on 9/9/2014
LAR 13-13 - Turbine Building Layout Changes	Revises the door location, clarifies column line designations, changes floor to ceiling heights and increases elevations and wall thickness in certain areas.	7/30/2013	Approved on 5/12/2014
LAR 13-14 - Turbine Building Battery Room and Electrical Changes	Revises the Non-Class 1E dc and Uninterruptible Power Supply System (EDS) and Class 1E dc and Uninterruptible Power Supply System (IDS) by: (1) Increasing EDS total equipment capacity, component ratings, and protective device sizing to support increased load demand, (2) Relocating equipment and moving Turbine Building (TB) first bay EDS Battery Room and Charger Room. The floor elevation increases from elevation 148'-0" to elevation 148'-10" to accommodate associated equipment cabling with this activity, and (3) Removing the Class 1E IDS Battery Back-up tie to the Non-Class 1E EDS Battery.	10/2/2013	Approved on 10/24/2014
LAR 13-15 - Operator Break Room Configuration	No description provided. This is no longer a LAR.	Changed to a Non-LAR Departure	
LAR 13-16 - Revision to Human Factors Engineering Design Verification Plan (GEH-120)	Revises referenced document APP-OCS-GEH-120 from Revision B to Revision 1.	9/25/2013	Approved on 7/31/2014

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*

**Appendix 5**  
**V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

PUBLIC VERSION

<b>Topic</b>	<b>Description of Change</b>	<b>Submittal Date</b>	<b>Status</b>
LAR 13-17 - Revision to Human Factors Engineering Task Support Verification (GEH-220)	Revises referenced document APP-OCS-GEH-220 from Revision B to Revision 1.	9/25/2013	Approved on 7/31/2014
LAR 13-18 - Revision to Human Factors Engineering Issue Resolution Plan	Revises APP-OCS-GEH-420 to make a number of changes in order to refine the process for capturing and resolving Human Engineering Discrepancies (HEDs) from that process document as described in Revision B.	10/3/2013	Approved on 7/31/2014
LAR 13-19 - Revision to Human Factors Engineering Plan	Revises APP-OCS-GEH-520 to make a number of changes in order to confirm aspects of the HSI and OCS design features that could not be evaluated in other Human Factors Engineering (HFE) V&V activities.	10/3/2013	Approved on 7/31/2014
LAR 13-20 - Modules / Stud Channel Obstructions Revision	Revises requirements for design spacing of shear studs and wall module trusses and the design of structural elements of the trusses such as angles and channels. These revisions are to address interferences and obstructions.	7/17/2013	Approved on 11/19/2013
LAR 13-21 - CA03 Module Design Differences	Corrects inconsistencies between Tier 2* and Tier 2 information.	2/2/2014	Approved on 4/17/2015
LAR 13-22 - Annex Building Structure and Layout Changes	The proposed changes would revise the Combined Licenses (COLs) by (a) installing an additional nonsafety-related battery, (b) revising the annex building internal configuration by converting a shift turnover room to a battery room, adding an additional battery equipment room, and moving a fire area wall, (c) increasing the height of a room, and (d) increasing certain floor thicknesses. The proposed changes include reconfiguring existing rooms and related room, wall, and access path changes.	12/4/2014	Under NRC Review

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*

**Appendix 5**  
**V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

**PUBLIC VERSION**

<b>Topic</b>	<b>Description of Change</b>	<b>Submittal Date</b>	<b>Status</b>
LAR 13-23 - Reinforced Concrete (RC) to Steel Plate Composite Construction (SC) Connections	The proposed amendment would revise Tier 2* and associated Tier 2 material related to the design details of connections in several locations between the steel plate composite construction (SC) used for the shield building and the standard reinforced concrete (RC) walls, floors, and roofs of the auxiliary building and lower walls of the shield building.	7/11/2014	Approved on 12/16/2014
LAR 13-25 - Tier 1 Editorial and Consistency Changes	Revises information to correct consistency and editorial issues. This submittal does not contain any technical changes.	7/2/2013	Approved on 7/31/2014
LAR 13-26 - EP Rule Changes	Revision to the Emergency Plan in order to comply with regulatory changes enacted by the Nuclear Regulatory Commission (NRC) in the Final Rule. These changes include the addition of text that 1) clarifies the distance of the Emergency Operations Facility (EOF) from the site, 2) updates the content of exercise scenarios to be performed at least once each exercise cycle, and 3) requires the Evacuation Time Estimate (ETE) to be updated annually between decennial censuses.	12/17/2013	Approved on 6/20/2014
LAR 13-27 - Control Rod Drive Mechanism Latching Relays	The proposed change would revise Combined License (COL) numbers NPF-93 and NPF-94 for Virgil C. Summer Nuclear Station, Units 2 & 3, respectively, to specify the use of Control Rod Drive Mechanism (CRDM) latching control relays (referred to as control relays herein) in lieu of field breakers to open the CRDM motor generator (MG) set generator field on a diverse actuation system (DAS) signal.	10/30/2014	Approved on 6/10/2015

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*

## Appendix 5

### V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

PUBLIC VERSION

Topic	Description of Change	Submittal Date	Status
LAR 13-28 - Piping Line Number Additions, Deletions, and Functional Capability Re-designation	The proposed changes revise the Combined License (COL) in regard to changes to the Automatic Depressurization System (ADS), the Passive Containment Cooling System (PCS), the Passive Core Cooling System (PXS), the Normal Residual Heat Removal System (RNS), the Containment Air Filtration System (VFS), Spent Fuel Pool Cooling System (SFS) and the Sanitary Discharge System (SDS) piping line numbers to reflect the as-designed configuration resulting from changes in piping layout or rerouting. The changes consist of adding or deleting piping line numbers of existing piping lines, or updating the functional capability classification of existing process flow lines for the tables.	12/18/2014	Under NRC Review
LAR 13-29 - Class 1E DC and Uninterruptible Power Supply System Removal of Spare Battery Termination Boxes	The proposed changes revise COLs concerning the Class 1E dc and Uninterruptible Power Supply System (IDS). The proposed changes replace four Spare Termination Boxes (IDSS-DF-2, IDSS-DF-3, IDSS-DF-4, and IDSS-DF-5) with a single Spare Battery Termination Box (IDSS-DF-3), and make minor raceway and cable routing changes.	12/19/2014	Under NRC Review
LAR 13-32 - WLS Changes	Clarifies the description of the WLS, including changing depiction of valves to be consistent with Tier 1 figure conventions, ensuring consistency between Tier 1 and Tier 2 descriptions, and clarifying the safety classification of the drain hubs.	8/30/2013	Approved on 1/8/2014

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*

## Appendix 5

PUBLIC VERSION

## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

Topic	Description of Change	Submittal Date	Status
LAR 13-33 - Passive Core Cooling System (PXS) Condensate Return	The proposed amendment would revise the plant-specific Tier 1 and associated Tier 2 material to increase the efficiency of the return of condensate utilized by the passive core cooling system (PXS) to the in-containment refueling water storage tank (IRWST) to support the capability for long term cooling.	7/8/2014	Under NRC Review
LAR 13-34 - Clarification of Tier 2* Material in HFE Documents	The proposed changes reclassify portions of the five Tier 2* Human Factors (HF) Verification & Validation (V&V) planning documents listed in Updated Final Safety Analysis Report (UFSAR) Table 1.6-1 and Chapter 18, Section 18.11.2.	3/19/2014	Approved on 10/8/2014
LAR 13-36 - CIM / DAS Diversity Clarification	The requested amendment proposed to depart from approved AP1000 Design Control Document (DCD) Tier 2* information as incorporated into the Updated Final Safety Analysis Report (UFSAR) by clarifying the position on design diversity, specifically human diversity, as related to the Component Interface Module (CIM) and Diverse Actuation System (DAS) design.	9/11/2014	Under NRC Review
LAR 13-37 - VCSNS Units 2 & 3 Tech Spec Upgrade	Revises Technical Specifications to closer align with the guidance of the Technical Specifications Task Force (TSTF) Writer's Guide for Plant-Specific Improved Technical Specifications, TSTF-GG-05-01, Revision 1, and with NUREG-1431, Standard Technical Specifications - Westinghouse Plants as updated by NRC approved generic changes.	12/4/2013	Approved on 11/12/2014

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*

**Appendix 5**  
**V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

PUBLIC VERSION

Topic	Description of Change	Submittal Date	Status
LAR 13-38 - ACI Code Compliance with Critical Sections Higher Elevations	Withdrawn after review with NRC-see Letter NND-13-0745.	11/7/2013	Withdrawn
LAR 13-39 - EPZ Expansion LAR	This amendment proposes a change to the VCSNS Units 2&3 Radiation Emergency Plan (Plan). VCSNS proposes the following changes to the Units 2&3 Plan: expansion of the Emergency Planning Zone (EPZ) boundary, and revisions to the Evacuation Time Estimates (ETE) analysis and the Alert and Notification System (ANS) design reports to encompass the expanded EPZ boundary.	5/18/2015	Under NRC Review
LAR 13-41 - Coating Thermal Conductivity	Revises Design Control Document (DCD) Tier 2 information as incorporated into the Updated Final Safety Analysis Report (UFSAR) to allow use of a new methodology to determine the effective thermal conductivity resulting from oxidation of the inorganic zinc (IOZ) used in the containment vessel coating system.	11/26/2013	Under NRC Review
LAR 13-42 - Tier 1 Editorial and Consistency Changes #2	Allows various changes to correct editorial errors in Tier 1 and promote consistency with the Updated Final Safety Analysis Report (Tier 2 information).	5/20/2014	Approved on 3/10/2015
LAR 14-01 - Auxiliary Building Roof and Floor Details	Departs from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) to identify design details of the floors of the auxiliary building that may vary due to design and loading conditions, in accordance with code requirements.	4/3/2014	Approved on 7/18/2014

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*

**Appendix 5**  
**V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

PUBLIC VERSION

<b>Topic</b>	<b>Description of Change</b>	<b>Submittal Date</b>	<b>Status</b>
LAR 14-03 - Tier 2* Editorial and Clarification Changes	Departs from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) by making editorial and consistency corrections.	6/12/2014	Under NRC Review
LAR 14-05 - Containment Internal Structural Module Design Details	The requested amendment proposes to depart from Tier 2* information in the Updated Final Safety Analysis Report (UFSAR), plant-specific Tier 1 and corresponding COL Appendix C information, and involved UFSAR Tier 2 information to address changes in the UFSAR and design documents related to containment internal structural wall module design details.	7/17/2014	Approved on 3/12/2015
LAR 14-06 - Enclosures for Class 1E Electrical Penetrations in Middle Annulus	Departs from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) by eliminating the Division A fire zone enclosure and adding three new fire zones for Divisions B, C, and D Class 1 E electrical penetration rooms.	6/20/2014	Approved on 12/30/2014
LAR 14-07 - CA04 Structural Module ITAAC Dimensions Change	The proposed amendment would allow changes to adjust the concrete wall thickness tolerances of four Nuclear Island walls found in Tier 1.	9/25/2014	Under NRC Review

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*



## Appendix 5

### V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

PUBLIC VERSION

Topic	Description of Change	Submittal Date	Status
LAR 14-08 - Integrated Test Program (ITP)	The requested amendment requires changes to the Updated Final Safety Analysis Report (UFSAR) in the form of departures from the incorporated plant-specific Design Control Document (DCD) Tier 2 information, and involves changes to related plant-specific Tier 1 information with corresponding changes to the associated COL information. Many of the changes in this amendment request are done in order to conform to the Tier 1 Section 3.4 exemption request described in Enclosure 2. In that change, construction and installation testing is removed from the ITP and replaced with component testing.	10/23/2014	Under NRC Review
LAR 14-09 - Turbine Building Switchgear Room and Office Layout Changes	The requested amendment would depart from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) by relocating fire area rated fire barriers due to changes to the layout of the switchgear rooms and office area in the turbine building. The requested amendment would also depart from plant-specific DCD Tier 2 material that involves the proposed Tier 2* departures.	9/18/2014	Under NRC Review
LAR 14-15 - Compressed and Instrument Air Supply Modification	The proposed change would revise the Combined Licenses (COLs) in regard to removing a supply line from the Compressed and Instrument Air System (CAS) to the generator breaker package and involves changes to related plant-specific Tier 1 information, with corresponding changes to associated COL Appendix C information.	10/30/2014	Under NRC Review
LAR 14-16 - Condensate Water Storage Tank Volume	No description provided. This is no longer a LAR.	Changed to a Non-LAR Departure	

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**Appendix 5**  
**V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

PUBLIC VERSION

<b>Topic</b>	<b>Description of Change</b>	<b>Submittal Date</b>	<b>Status</b>
LAR 14-18 - Containment Hydrogen Igniter Changes	The proposed departures consist of changes to plant-specific Tier 1 (and COL Appendix C) tables and UFSAR tables, text, and figures related to the addition of two hydrogen igniters above the In-Containment Refueling Water Storage Tank (IRWST) roof vents to improve hydrogen burn capabilities, incorporating consistency changes to a plant-specific Tier 1 table to clarify the minimum surface temperature of the hydrogen igniters and igniter location, removal of hydrogen igniters from the Protection and Safety Monitoring System (PMS) from a plant-specific Tier 1 table, and clarification of hydrogen igniter controls in a Tier 1 table.	5/6/2015	Under NRC Review
LAR 14-19 - HFE OSA Task Update and Removal of WCAP-15847	Tier 2* document WCAP-15847 identifies documents that were used to support the AP1000 Design Certification. These documents have either been superseded or discontinued. Therefore, an amendment is being proposed to implement the necessary Tier 2* changes to delete WCAP-15847 from the UFSAR. In addition to this change, a Human Factors Engineering (HFE) Operational Sequence Analysis (OSA) task related to the Automatic Depressurization System (ADS) needs to be clarified.	1/27/2015	Approved on 6/2/2015
LAR 15-01 - HFE V&V Plan Updates to Support ISV	The proposed changes will resolve inconsistencies and implement changes identified during the review of Human Factors (HF) Verification and Validation (V&V) plans. These changes involve revising Tier 2* information contained within the Human Factors Engineering (HFE) Design Verification, Task Support Verification and Integrated System Validation (ISV) plans.	2/10/2015	Under NRC Review

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*

**Appendix 5**  
**V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

PUBLIC VERSION

Topic	Description of Change	Submittal Date	Status
LAR 15-03 - Main Control Room Emergency Habitability System (VES) Design Changes	The proposed changes revise the COLs concerning the design details of the Main Control Room Emergency Habitability System (VES). These proposed changes would revise ASME safety classification and transition location, equipment orientation and removal, and identification of the number of emergency air storage tanks.	6/30/2015	Under NRC Review
LAR 15-07 - Reclassification of Tier 2* Information on Fire Area Figures	The requested amendment and exemption identify portions of the licensing basis that would more appropriately be classified as Tier 2, specifically the Tier 2* information on Fire Area Figures 9A-1, 9A-2, 9A-3, 9A-4, 9A-5, and 9A-201 in the VCSNS 2 and 3 Updated Final Safety Analysis Report.	5/4/2015	Under NRC Review
LAR 15-09 - Use of AWS D1.1-2000 Criteria for Structural Welds	The requested amendment proposes to depart from Tier 2* and associated Tier 2 information in the Updated Final Safety Analysis Report (UFSAR) (which includes the plant-specific DCDD Tier 2 information) to revise the application of American Institute for Steel Construction (AISC) N690-1994, Specification for the Design, Fabrication and Erection of Steel Safety-Related Structures for Nuclear Facilities, to allow use of American Welding Society (AWS) D1.1-2000, Structural Welding Code-Steel, in lieu of the AWS D1.1-1992 edition identified in AISC N690-1994.	5/26/2015	Under NRC Review

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*